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04

™

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3ds Max Model, texture and render a femme fatale

Maya Concluding part of retro American diner project

Houdini 10
Latest version reviewed

Model a sci-fi vehicle
Construct it with poly models and V-Ray lights

• Step-by-step tutorial
Create animal hair in 3ds Max
Model and render a horse race

• Your questions answered!
Ambient Occlusion
Use it to fake HDRI in Maya

• Step-by-step tutorial
Shiny leather materials
How to create sexy outfits in 3ds Max

Plus: Image Foundry on mixing architectural visualisation with TV VFX

Reviews: Intuos4 graphics tablet, Snap Art 2, DX Studio 3.1, 3ds Max 2010 in-depth review, Houdini 10

inside

Final part of huge Maya tutorial
How to texture
Assign textures and materials in our Maya architectural tutorial

• Review
3DS MAX 2010 HAS ARRIVED
Full review of industry-leading package

LEARN TO CREATE STUNNING 3D
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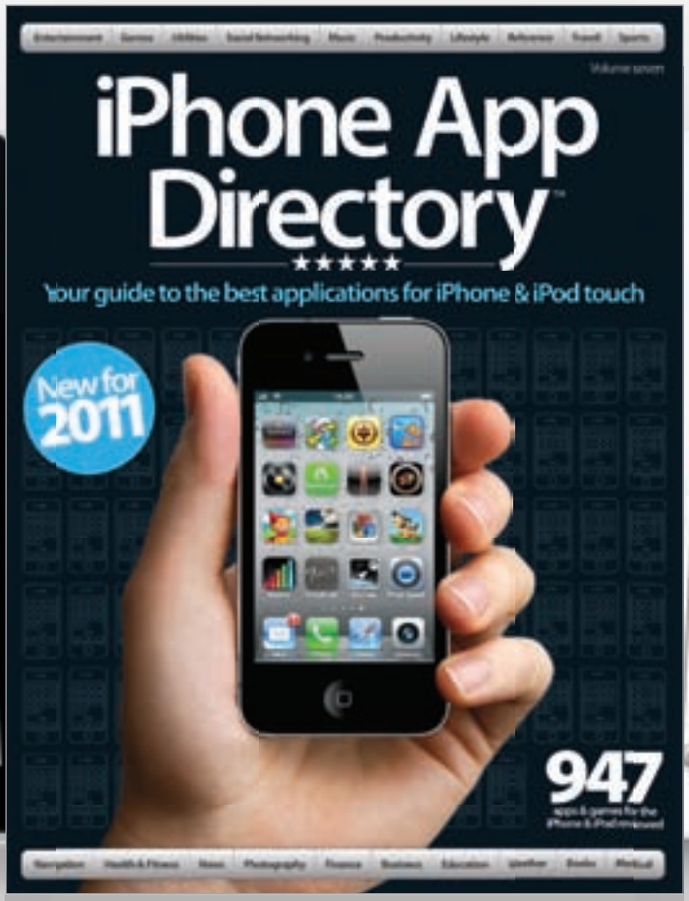

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Artist info

Anastasiya Igolkina

3DArtistonline.com

Username Igolochka

Personal portfolio site www.renderosity.com/mod/gallery/browse.php?user_id=554889

Country Russia

Software used DAZ Studio, Photoshop Elements

Cover artist

Anastasiya has managed to extract the maximum amount of detail and colour from a DAZ model, and with a little post-production work has produced a striking and colourful portrait.

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Welcome

to the magazine and 116 pages of 3D goodness

Every issue you can count on...

1. **116 pages of creative inspiration**
2. Behind-the-scenes guides to images and artwork
3. **A CD packed full of creative goodness**
4. Interviews with inspirational artists
5. **Tips for studying 3D or getting work in the industry**
6. The chance to see your art in the mag!

Welcome to another edition of your favourite foray into the shiny world of 3D. There's lots packed in this issue, from interviews covering the worlds of architecture, TV and advertising to a feature on how DAZ 3D is following the Blender route by offering free software with paid-for content. On the tutorial front, the massive gas station diner concludes – the first part is on the CD in case you missed it. *No More Wine* features an undersea pirate creature having dinner – no, really, it does – see page 44. And finally, you can't escape the fact that there's a new version of Max on the streets, so check out page 84 for the review.

Duncan Evans,
Editor

This issue's team of expert artists...

Mark Bremmer

Mark is going undercover; he's going into the art zone. The Digital Art Zone. That's DAZ 3D to you and me

Simon Blanc

We've been hunting this tutorial down for a couple of months now, but finally we catch up with Simon in Davy Jones' locker

Rebeca Paniagua

Putting sexy back into... well, looking at these models it was never missing. Rebeca reveals a world of tight latex

Lance Hitchings

Lance runs a design studio stateside, and is also the chap manning the Q&A help desk for your 3D problems

Gustavo Groppo

From 0-60mph at near light speed. Gustavo reveals his solution for urban traffic jams with this shiny bike

Lee Davies

Lee is employed as a character modeller for a Dublin-based company. He's here to answer your character questions

April Madden

April is deputy editor on **Corel Painter Magazine** and a graphic artist. Boy, did she enjoy the book reviews this month

Rosie Tanner

Investigating the courses that matter at a university near you, Rosie is our very own blonde-haired Donald Macintyre

Ruben Arango

I thought I'd seen everything you could render in 3D until Ruben's horse racing tutorial arrived. Equine excellence

Sarah Slee

If you need to know what's going down on the mean streets of 3D, check out pixie-like Sarah's community pages

John Hayes

John works as a character artist for Sega. He designs models over breakfast and is our go-to Q&A man

Christian Darkin

When we've got something mind-bendingly large to review, we give it to Christian. He hasn't left home for months

Sign up, share your art and chat to other artists at www.3dartistonline.com

3DArtist

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www.3dartistonline.com

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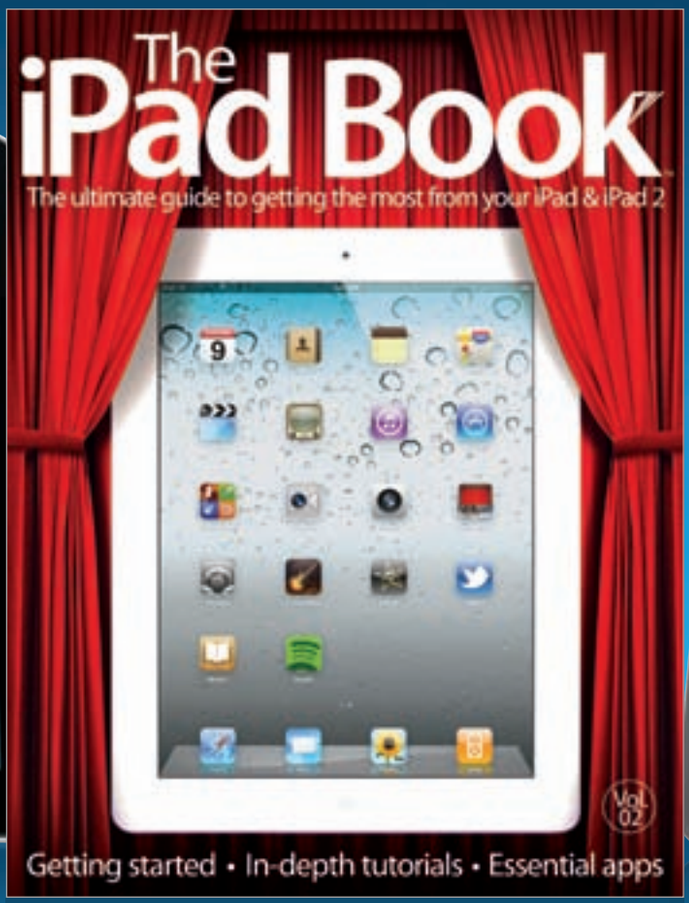
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Contents

04

Discover how these images were created...

Create an architectural wonder

> "We'll continue building the set and modelling the interior of the building"

Nine-page step-by-step walkthrough guide

58

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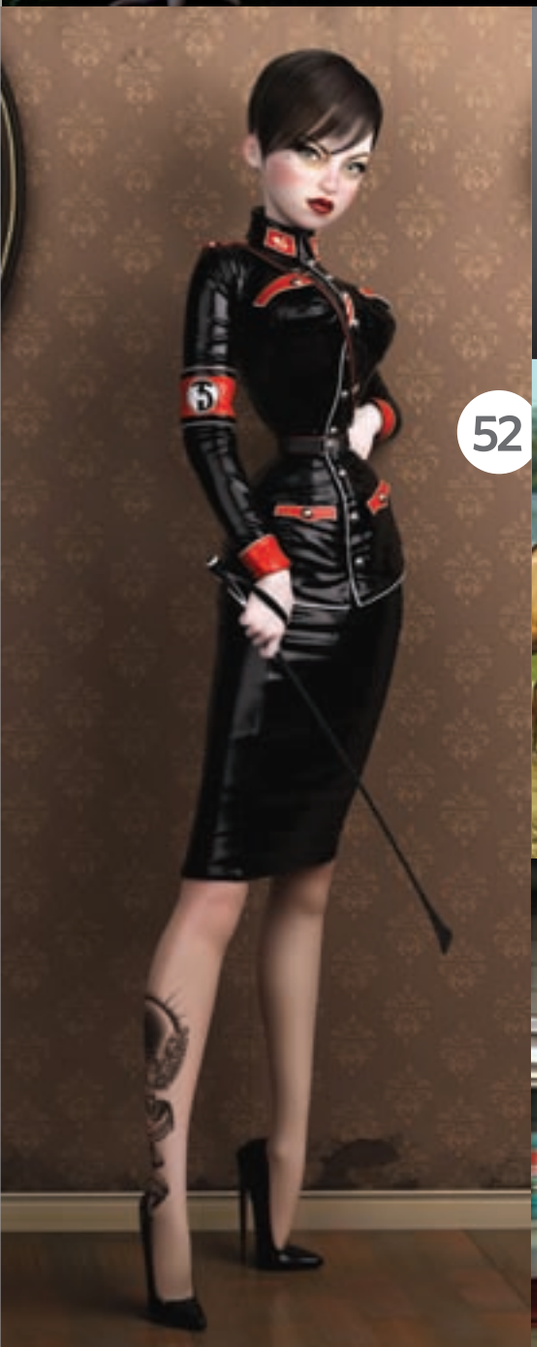
“The main goal was to forget the technical aspect of 3D and focus on the funny situation instead”

Simon Blanc on what he was focusing on with *No More Wine*. **Page 44**

44



52

DAZ 3D Girl 4 Assets: Free base model

Last issue you got Girl 4, now it's time to add hair, a cloak and some body shapes for her

Plus video, a Volt car model and seamless textures

Turn to page 112 for the complete disc contents

On the Disc

Free: Maya video

70 mins! Turn to page 112 for details

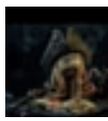
76

68

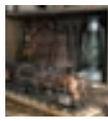
The Studio

Professional 3D advice, techniques and tutorials

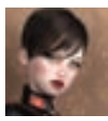
44 Behind the scenes: *No More Wine* tutorial
Six-page guide to ocean life when you're a pirate cephalopoda



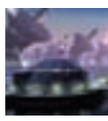
50 I made this: Denis Tolkishevsky, *Train*
Denis has been labouring over an amazingly detailed image



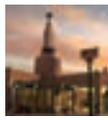
52 Step by step: *Mistress Lili*
Rebeca has drawn upon the fetish world for this femme fatale with a shiny latex outfit



56 I made this: Daniel Lovas, *Rising Tide*
A futuristic scene featuring twin planets and departing spaceships



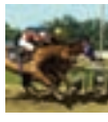
58 Main tutorial: Route 66 gas station diner
Final part of the massive Maya tutorial. Add textures and render



68 Behind the scenes: *Ride*
In the future we'll all be riding these sci-fi bikes (though hopefully not into a lamppost at light speed)

74 I made this: Cesar Martinez, *Church of the Calatravas*
This Spanish artist shares his superbly detailed church image

76 Step by step: *Race to Win*
Here's something new – horses complete with hair and veins engaged in a dramatic race



Continued overleaf

There's even more inside...

Turn the page to discover the interviews, reviews, industry advice and more that we've packed into this issue...

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INSIDE ISSUE FOUR

Contents 04

Inspiration • Interviews • Reviews and more

11 The Gallery
All the great images in 3D that we've stuffed in our grab bag

22 Community
News, contests, artwork and letters from the 3D community

28 Interview: Saddington & Baynes
Enter the world of high-powered advertising CGI

34 Feature: Inside the Digital Art Zone
How DAZ 3D combines free software with paid-for content

40 Interview: Image Foundry
Mixing 3D architecture with VFX for TV and games

44 The Studio
A world of tutorials and insights into simply fabulous images

80 Questions and answers
Got questions about 3D software? Get the answers here

84 Review: 3ds Max 2010
The industry goliath is reborn with an all new modelling toolset

88 Review: Houdini 10
Making a splash in the world of animated effects

90 Review: Intuos4
The biggest graphics tablet you've ever seen or your money back

91 Review: Snap Art 2
Take that 3D render and turn it into a piece of traditional art!

91 Review: DX Studio 3.1
Relatively inexpensive package for creating simulations and games

92 Reviews: Books
A selection of the best 3D books

110 Subscribe today!
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112 On the disc
Check out the Girl 4 assets and the 70-minute Maya training video

See your artwork here...
Create a gallery today at 3DArtist online.com
Share your art, comment on other artists' images

"DAZ Studio allows for continued use of our content while enabling export to Poser formats that are supported by 3D apps"

Chad Smith on contingency plans for Poser-format content. **Page 34**

workspace 3D

Inside guide to industry news, studios, expert opinion & education

96 News
Industry events, awards, courses and news you need to read

98 Studio access: Starbreeze Studios
Behind the scenes in the making of the latest *Riddick* game

102 Interview: Jason Godbey
What you need to know to get a job as an environmental artist

104 College course: University of Cumbria
We check out the Animation course plus student portfolios

108 Worldwide student gallery
Course students show their work

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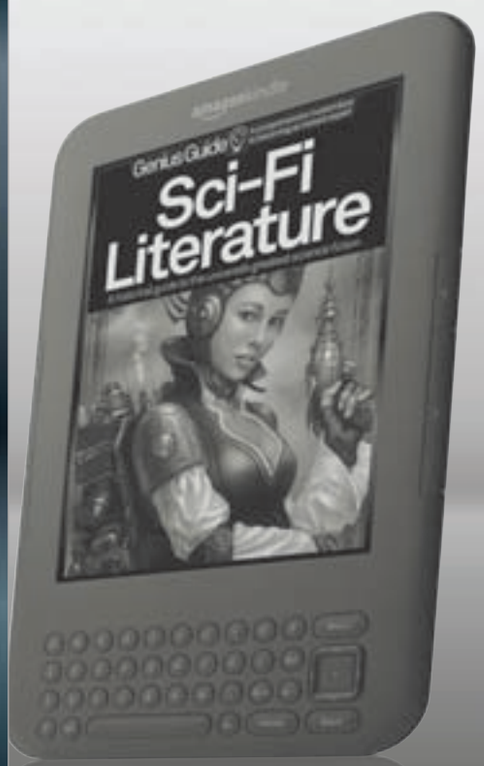

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WELCOME TO THE GALLERY

Eleven pages of great artwork from the 3D community

Images we love!

> This is my 3D work of Pope Benedict XVI. It was modelled and rendered in 3ds Max, while Photoshop was used for textures, dust effects and colour correction

Giorgia Marino *Pope Ratzinger, Benedict XVI, 2009*

Artist info

Giorgia Marino

3DArtistonline.com

Username Icepar

Personal portfolio site http://icepar.cgsociety.org/gallery/

Country Italy

Software used 3ds Max, Photoshop

Featured artists

Christ Tackett It's a happy scarecrow - look at those fabric textures!

Fernando Russo Life in an Italin cloister captured with perfect atmosphere

Hyun-hee Lee Sexy girl in a skin-tight outfit and with purple lighting

Alessandro Baldasseroni The game wasn't great, but this image has fantastic detail

Miguel Teixeira A striking and graphic image with superb design and colour

Neil MacCormack The shiny future complete with spaceships and the rising sun

Steve Barrett A ghastly, effective, Matrix-style image for Poser

Armin Primig Lovely countryside image with a working windmill

Dieter Joppich Rather scary scenario with small boy and fierce machines

Get your artwork featured in these pages

Simply send it to the **3D Artist** Gallery. Here's how...

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3. Tell us about them!

Have an image you feel passionate about? Drop editorial an email at **duncan.evans@imagine-publishing.co.uk**.

Email or post

You'll be missing out on a thriving 3D community, but if you'd rather submit your work by email or post, here's how. Make sure your image is at least 3,000 pixels on the longest side, save it as a maximum quality JPEG or zip it up as a TIFF and email it to the address below. Please include your contact details! If you've created a Pixar-beating animation and want to see that featured on the cover CD, then save it onto a CD and post it to us. You can also send your images on CD. The addresses are:

duncan.evans@imagine-publishing.co.uk

The Gallery, 3D Artist, Imagine Publishing, Richmond House, 33 Richmond Hill, Bournemouth, Dorset, BH2 6EZ

Comment on more great 3D art...

Head straight over to **www.3dartistonline.com**, register and you can leave comments for other artists. Some of the people featured here already have their galleries, so get online and join our club!

Create your gallery today: www.3dartistonline.com

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“This image is as if it were a photo taken in an Italian convent in 1495. The painting was under construction, and it represents all the objects and tools that were used in that era. This idea came about while I was visiting the Uffizi Museum in Florence”

Fernando Russo *Affresco – God's year 1495*, 2009

Artist info

Fernando Russo

3DArtistonline.com

Username Fernando Russo

Personal portfolio site www.webalice.it/gattone_blu

Country Italy

Software used CINEMA 4D

Work in progress...

The team Loves

“This was a nice idea that was inspired by a very artistic setting. There's lots to look at and plenty of atmosphere”

Jo Editor in Chief

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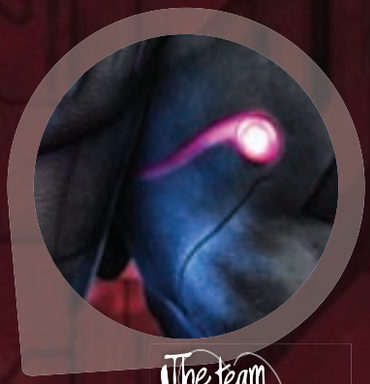

The team Loves

Great colours and outfit on this sexy rider. The purple lights all over the costume really add to the effect. Nice pose as well!

Duncan Editor

This is my latest artwork called *Night Rider*. The original design concept featured a vehicle, but I didn't include it in order to emphasise the character. A lot of editing has been done throughout the concept stage to 3D illustration, especially the face, which was textured with Maya's Subsurface Scattering shader. Mudbox helped a lot in modifying the face quickly

Hyun-hee Lee *Night Rider*, 2007

Artist info

Hyun-hee Lee

3DArtistonline

Username Digieyes

Personal portfolio site www.digieyes3d.com

Country Korea

Software used Maya 8.5, Mudbox, BodyPaint 3D and Photoshop CS2

Work in progress...

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The team Loves

"Although the game left something to be desired, this is a fantastic image with lots of detail and impact"

Duncan Editor

"This is marketing material for the videogame *Hellgate: London* by Flagship Studios"

Alessandro Baldasseroni
Hunter, 2006

Artist info

Alessandro Baldasseroni

Personal portfolio site www.eklettica.com

Country Italy

Software used 3ds Max, Photoshop, ZBrush

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Artist info

Miguel Ângelo Carvalho Bernardo Teixeira

Personal portfolio site www.malanjo.net

Country Portugal

Software used 3ds Max, ZBrush, Photoshop, V-Ray

Work in progress...

The team Loves

"A cracking character with fantastic design elements and a striking background as well!"

Jo Editor in Chief

"This image was inspired by *Hellboy*, and was created to show an urban ghetto lifestyle. It was an exercise done last year to improve my skill in character design and development"

Miguel Ângelo Carvalho Bernardo Teixeira *El Nino*, 2008

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The team Loves

There's a real ambience of the future here, with the repeated structures and the rising sun sending glowing rays down towards the viewer. And the spaceships are nice, too!

Ross Head of Design

“This is a conceptual design for a station in the future. It was constructed and modelled in LightWave, where I reused the structures to form a symmetrical progression into the distance where figures were added. Photoshop was used to add some texture detail after the render”

Neil MacCormack *Future Station*, 2008

Artist info

Neil MacCormack

Personal portfolio site www.bearfootfilms.com

Country UK

Software used LightWave 3D, Photoshop

Work in progress...

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The team Loves

"Very *Matrix*-esque, with super use of the models from Poser being bent to Steve's will to form a chilling image"

Lora Group Art Editor

Artist info

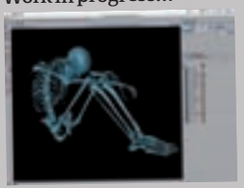
Steve Barrett

Personal portfolio site
www.stevebarrett.com

Country England

Software used CINEMA 4D, Modo, Poser, Photoshop

Work in progress...



"My ideas usually evolve in my sketchbook, then I model and execute my artwork directly in 3D software and Photoshop. I'd say that my technique has the immediacy of mixed-media paintings or a watercolour. Having the option of viewing my subject matter from various angles is exciting and offers endless experimentation"

Steve Barrett *Embryo III*, 2008

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Artist info

Armin Primig

3DArtistonline Username nbeyond

Personal portfolio site www.ncreate.co.at

Country Austria

Software used CINEMA 4D, Photoshop

Work in progress...

The team Loves

"There's a real story going on here, with the lights in the windmill beckoning the reader to come and look in through the window"

Jo Editor in Chief

"Originally, I wanted to place the windmill on a flying island, but the idea didn't work out as I had imagined so I decided to focus most of the attention on the mill. It's not exactly what I had in mind at the beginning, but I am definitely satisfied with the result"

Armin Primig *When all the children sleep* 2009

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Artist info

Dieter Joppich

3DArtistonline.com

Username djart

Personal portfolio site
www.3djart.de

Country Germany

Software used CINEMA 4D, Photoshop

Work in progress...

"The story is about a little child on a journey for its soul. The kid is taken by several steampunk machines deep into the Hall of Souls, where at the end he finds his soul. The image shows the scene where the child is taken over by the Soulguard, because the Repairbot can't go any further (he is hanging on steam tubes)"

Dieter Joppich
Hall of Souls, 2008/9

The team Loves

"It's a scary image at first to see a small child surrounded by such menacing machinery, but as the story explains, they are there to help him on his way"

Duncan Editor

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> This image was created for a client's seasonal line of printed products. It was rendered in several passes in ZBrush and composited in Photoshop. Post-processing work helped to add a bit more atmosphere as well as create a storybook feeling for it
>
> **Chris Tackett** *Fall Scarecrow*, 2008

Artist info

Chris Tackett

3DArtistonline.com
Username: KrakenCMT

Personal portfolio site
www.loadedbrush.com
Country USA
Software used ZBrush, Photoshop

Work in progress...

The team Loves

What fabulous colours, excellent fabrics and super characterisation. This really is a great image for autumn

Jo Editor in Chief

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The concept art for 'Durian' is shaping up nicely

The early signs of 'Durian' looks like it will be epic – just how we like our animation shorts!

Comic collaboration

Dutch author of comic books to work on open 3D animation film, 'Durian'

Producer Ton Roosendaal and author of comic books Martin Lodewijk are teaming up to work on an open 3D animated film by Blender. 'Durian', the film's working title, will be the company's third short film made using the free and open source software. Lodewijk is best known for his creation Agent 327 and work on Don Lawrence's *Storm* series. The esteemed writer will develop the plot and be involved in the storyboard phase.

Production on 'Durian' will start in September 2009, with a team of eight animators and 3D specialists set to work on it for six to eight months at Blender's studio in Amsterdam. Users and sponsors of the open source 3D program will fund the project, and the finished article will be distributed freely when it's finished. Roosendaal hopes that the film will help to develop publicly available advanced 3D animation techniques, saying: "We expect 'Durian' to set a new milestone for independent and open source production methods." The worldwide premiere for 'Durian' is scheduled for April 2010. For more details, check out http://durian.blender.org/.

> "We expect 'Durian' to set a new milestone for independent and open source production methods"
> **Ton Roosendaal** chairman of Blender

3DArtist online.com

Discuss what you think of Blender and the company's previous short films with other 3D artists at **www.3dartistonline.com**

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3D web update

New sites and changes to your favourites – it's all here!

3Dsnap.com

3Dsnap.com is a new portal offering the chance for artists to access and share free 3D models. Members of the 3D community are encouraged to visit the site and use the freebies for their projects and, if they're feeling generous, upload some of their own designs.

As you would expect, the site's archives are organised into categories such as Food, Buildings and Transportation, with plenty more besides. Loads of different models are available, from ants to axes, so it's definitely worth checking out. There's no forum but the site is still quite new, so there's every chance one could be added in order to enhance the sense of community. Visit **www.3dsnap.com** for more details.

Free foliage

There are now over 1,000 free models and texture files of different species of plants and trees on Autodesk Seek.

These ultra-realistic freebies have been developed by botanical experts and come from photos, sketches and actual samples of each plant – floral elements like petals, bark and leaves have been scanned in to make these true-to-life models.

There are even different versions of the same plant at different ages or stages throughout the year, which show changes in things like colour and size. The level of detail really is quite extraordinary. Check them out for yourself at **http://seek.autodesk.com/**.

Inspiration for *Chef Zabuza* came from a Kaiten-zushi restaurant during a trip to Japan

Masterpiece Chef Zabuza

Daniele is an artist who loves to create cartoon characters. He chats to us about his image *Chef Zabuza*

Daniele Orsetti www.dayno.it

Daniele Orsetti is a freelance artist from the city of Padova, Italy. His wonderful image *Chef Zabuza* was inspired during a trip to Japan where he ate in a Kaiten-zushi, or conveyor-belt sushi restaurant. He elaborates: "I really loved it, so I decided to create my own personal representation of the place."

The piece took two weeks of Orsetti's free time, using ZBrush for blocking the shapes and retopologising the meshes of the character. Elsewhere, the environment and food were carefully modelled in Maya, then Photoshop and mental ray were used for the final stages of the composition's creation.

Take a trip to his online portfolio at **www.dayno.it** in order to see more of his work.

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SIGGRAPH short list

2009 award nominees revealed

The organisers of the annual computer animation festival SIGGRAPH have announced their 2009 nominees. Students and studios alike are within the 12 projects picked for the conference, which will be held in New Orleans this August. The award categories are Best in show, Jury award, Student prize and WTF or 'Well-told fable' award. A total of 770 submissions were sent in and, as Carlye Archibeque explained, the standard was extremely high: "We were thrilled with [the] level of quality and technical expertise that was prevalent throughout the hundreds of submissions." Check out **www.siggraph.org/s2009** for the full list of nominees.

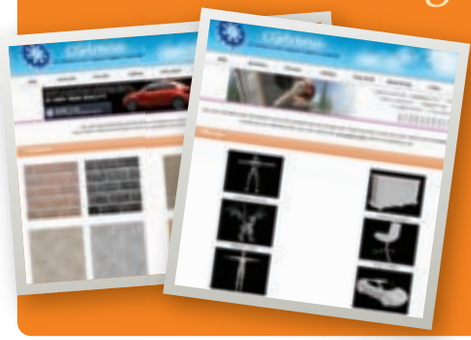
The youth of today

School students gear up for the final round of a national design competition

The final of the Lionheart Challenge 2009 is taking place on 13 July. The competition sees over 30,000 14-15-year-olds designing a product and then visualising it using CINEMA 4D. Students work in teams of ten and begin by taking part in in-school heats, delivering their presentations to senior staff and local businesspeople. The winners from that round then go on to compete at a regional level. This year there are over 130 champion school teams taking part. A lab licence of the CINEMA 4D Studio Bundle is on offer to the winning team. We'll feature coverage of the Lionheart Challenge's final round, so check back with us for details on the winners.

Website of the month

CGArena www.cgarena.com



CGArena is a fantastic resource for 3D artists. Not only does it provide the latest industry news, a buzzing forum and info on the latest jobs, it also acts as a great portal for free meshes, textures and models. Perhaps the most useful feature on the homepage is the Upcoming Awards panel; it's a scrolling list of the latest competitions, their closing dates and links to them. Having all that information in one place is a godsend for many designers who no doubt spend a lot of their time trawling through many forums and sites to find these. We urge you to bookmark this site!

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Free 3D Resources

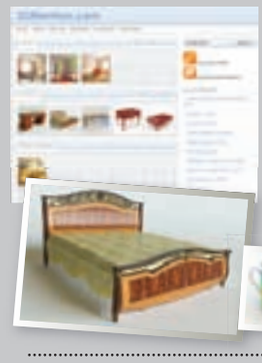
Free models online

Take advantage of high-quality models that cost nothing more than a few mouse clicks

3DMention

Browse through a small selection of models and interior scenes with ease

Web: www.3dmention.com

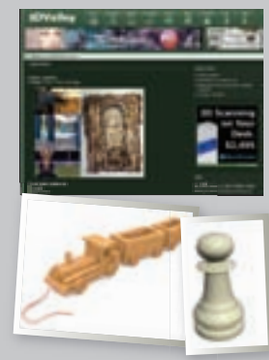


The first thing you'll probably notice about 3dMention.com itself is its clean and simple design. There is a helpful 'latest updates' sidebar, plus the option to sign up and receive email updates, should you so wish. 3dMention.com's range of models is small, offering mainly household items and interiors, but what's here is very good quality.

3DValley

Get your fix of 3D models, textures and tutorials from here

Web: www.3dvalley.com

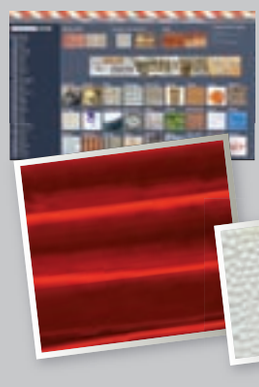


This website provides artists with a variety of free models and textures. You can pick from categories such as Animals, Weapons and Transport, while the textures include Stone, Eyes and Fabric. 3DValley's blog-style approach mixes the latest news, featured artists and free resources within its Recent Posts, which ultimately saves you time, too.

CG Textures

Want some free textures? Look no further...

Web: www.cgtextures.com



CG Textures claims to be the biggest free texture site, which isn't surprising when you see how many are available on here. They're all very well organised into various categories, plus the News section highlights the latest additions. There is also a forum and a few tutorials on here, too.

QUIDAM 3

New version of the character-creation program released by N-Sided

Character creation is set to become a little bit easier for 3D artists. According to N-Sided, one of QUIDAM 3's many benefits is that it can perfectly export multiresolution models that are ready to be used in all major 3D applications.

The new version of the program comes with custom characters, textured multiresolution 3D objects as well as paint and bump brushes, high-resolution textures, backgrounds and floors. All this is in addition to a wealth of skeletons, poses and camera presets. What's more, the rewritten 3D paint model now provides a direct bridge to Photoshop, too.

Check out http://n-sided.com/ for more details and information.

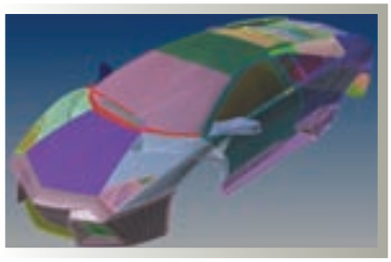
QUIDAM 3 has the capability to generate thousands of characters instantly, each different to the next one

Work in progress

Lamborghini Reventon

Having dedicated over 80 hours to this image so far, Dan Haga reveals exactly what inspired him to take on such a mammoth project

Dan Haga www.danhaga.com and www.directdimensions.com



The Lamborghini Reventon has truly been a labour of love for digital artist Dan Haga. The detail in his image is incredible, but for what reasons did he pick this car? "One being the cool factor and another being the complexity. Modelling this car accurately will put any CAD package or modeller to the test," he explained.

Haga used a Kreon laser scanner mounted on a FARO arm to scan a die-cast model of the car. PolyWorks was then used to process the scan data and export a point cloud file. To create the actual model, he has been using Rhino 4.0 with the Pointools plug-in (www.pointools.com). To see more of Haga's work, check out www.danhaga.com.

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Artist spotlight

The great outdoors

Meet Veve. He is a 3D artist and 3ds Max instructor who hails from Belgrade, Serbia

Veroljub 'Veve' Milovanovic http://veve.cgsociety.org/gallery/

Veve has a passion for the outdoors and it's reflected beautifully in his work. This particular image, *Forest Mill*, is a combination of his favourite things: old buildings and nature. It has taken him between 15 and 20 hours to create, working on it for short periods at a time, using 3ds Max, V-Ray and Photoshop. Veve specialises in exterior and interior images, which is, he says: "Partly due to my job [as a 3ds Max instructor] and partly because I find it's the best way to represent my creativity." Check out his portfolio at **http://veve.cgsociety.org/gallery/**.

Software shorts

Get the lowdown on updates and launches

Shade 10 announced

The English edition of Shade 10 has now been announced. Mirye Software, the company behind the popular 3D curved-surface modeller, animation and rendering program, is also offering English users of Shade 9 access to the beta version via a simple serial number. When it is released, they will then get a free upgrade to Shade 10, so there's no reason not to get involved! Take a trip across the internet to **www.mirye.net** to get in on this fantastic offer.

DAZ 3D Dynamic Clothing

This Dynamic Clothing Control plug-in, graciously made available from DAZ 3D, enables you to control gravity around your model's clothing, which is so helpful in making their outfit float as well as drape their body realistically. You are also able to create your own fabric and add it to the garment, which is perfect for perfecting the final details on a composition. Visit **www.daz3d.com** to get more information on getting a slice of this action.

Tools of the trade

SAMSUNG P2370HD LCD MONITOR

Adding a 'touch of colour' to your workspace

Samsung's latest HD LCD monitor in its 'Touch Of Colour' range is ultra-slim and ultra-gorgeous. With the P2370HD's screen depth at just a jaw-dropping 30mm, you're sure to have the maximum work space available.

In addition to its small desk footprint is its small carbon footprint, which uses around a third less power than other typical monitors its size.

The Samsung P2370HD LCD monitor also features full high-definition 1,080p resolution (1,920 x 1,080), which is perfect for checking out HD television content.

Meanwhile, the 2ms video response time ensures that you will have less blurring during fast-moving gameplay (3D artists need serious downtime as well, you know...).

Pay homage to **www.samsung.co.uk** in order to get details of stockists, so you can get one of these beauties set up in your home as soon as is humanely possible!

The P2370HD comes with an HDTV tuner, integrated speakers and a remote control

3DArtist online.com
Create your gallery, browse the artwork, chat with experts and artists and get tips and techniques at
www.3dartistonline.com

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Have your say

Write, email or use the website forums to get in touch about the magazine, your problems or triumphs

Send your letters to...

Email the team directly with your letter
3dartist@imagine-publishing.co.uk

Log in and leave your comments on the forum
www.3dartistonline.com/forum

POST TO:
The Editor, 3D Artist,
Imagine Publishing,
Richmond House,
33 Richmond Hill,
Bournemouth,
Dorset
BH2 6EZ, UK

Silo recommended

Silo is a powerful, yet budget-friendly modelling program by NeverCenter (www.nevercenter.com). With this package you can not only do polygon modelling, but sculpting and UV mapping as well. Its interface, due to Silo being dedicated to modelling, is clean and simple to learn. A much-loved feature is Silo's Topology tool. Mudbox and Modo are said to be slightly better, but the price difference between them and Silo is more than slight. Very much recommended.

Boone, forum post

We agree; for those on a limited budget it's got to be worth a punt. Also, you might want to look at Shade 8.5 (PC and Mac) on the cover CD of issue 3.

Import woes

Well, I went to Borders here in the USA and wasn't really expecting to come across any decent mags, but picked this one up thinking it was just another magazine. As usual, I fireballed through *3D World* and then got to this one – only to find it had a spread on Blender. As I am new to 3D and I use Blender, this was refreshing to see. As I perused the mag, I found it very pleasing on the eyes with the extra sidebars and images with the WIP insets. I turned to my wife in pure amazement to see that this was the launch issue. I quickly purchased it and have been drawn to it ever since I got the baby to sleep. In my opinion, this is one of the best industry and art magazines I have seen. It has a nice flow to it, with the articles written clearly and with meaning. I am not bombarded by thoughtless layouts on every page and over-the-top advertising to hide the lack of content.

My only complaint comes from having seen that this magazine came out two months ago. We, here in the US, have to wait a long time, and also are forced to pay top dollar – $15 is a pretty hefty price tag. I did find that the subscription discount offer is still going on but $75 is a nice chunk of change, especially in this economy and being as broke as I am. Well, great magazine, congratulations on getting it out and best of luck. Hopefully, I'm a new reader who will be hanging around for a long time!

Leestradamus, forum post

Glad you picked it up and liked it. All I can say is that it's going to get better and better, but we are always going to be featuring high-class art and artists – hence the title. Really, the cost of importing the magazine is down to the local importer, and I'm sorry it can cost quite a bit but there's nothing we can do about that other than offer a special subscription price for US readers. $75 for 13 issues a year works out at a measly $5.76 an issue, and given the quality we pour into the mag, that's really not a lot. It costs £6 on the newsstand here.

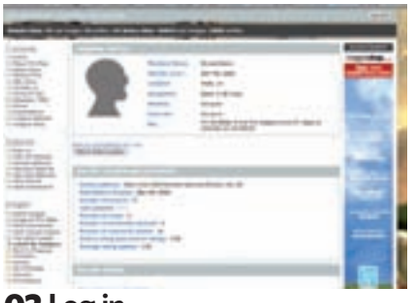
Set up your online gallery

REGISTER AT OUR WEBSITE, UPLOAD IMAGES, CONTRIBUTE TO THE FORUMS

www.3dartistonline.com

01 Register your details

First click on the Join Now box in the top-right corner. Fill in your personal details – the ones in blue are mandatory. Think of a good member name and a password. When you're happy, click Create User. You'll be sent an email with a link. Click this and enter your password to activate your account.



02 Log in

Your account is now created. Every time you visit www.3dartistonline.com, enter your username and password to log in. If your PC or Mac allows cookies, you can store the password and log on automatically. Click the top-left link to access your account. Now click on Add New Image to add some images.

03 Upload pics

Fill in the title of your picture and describe how you made it and what it was for. Pick a category and navigate to the image for the upload. It can be 1,280 x 1,024 max, and must be a GIF, JPEG or PNG. Hit Submit Image. Once we've approved it, it'll be added to the Gallery and your portfolio.

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Learn in style

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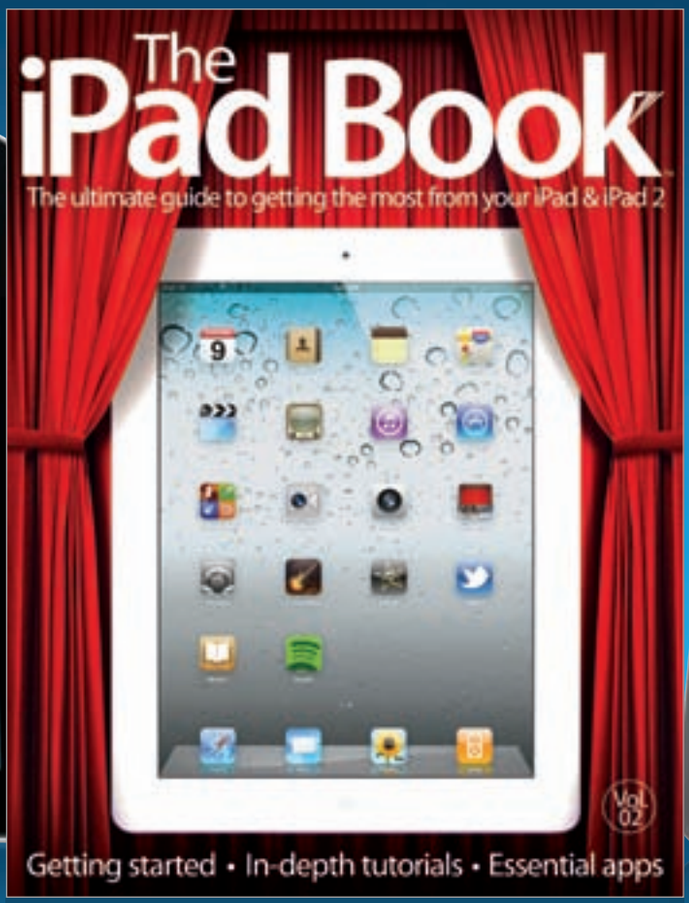
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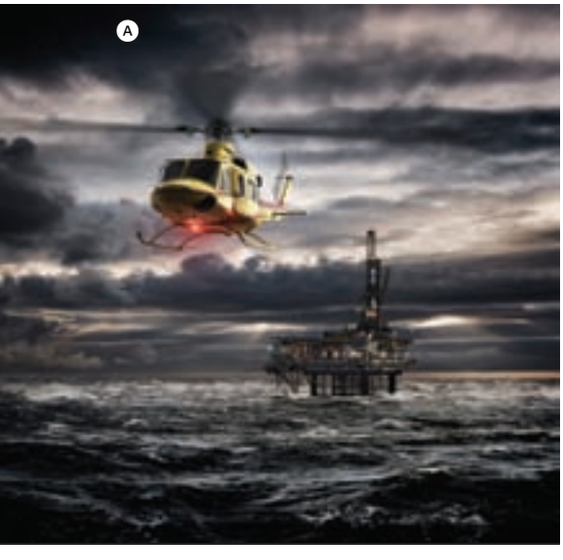
Duncan Evans talks to Chris Christodoulou of Saddington & Baynes about the future of CGI and design in the advertising agency market

CGI and the salesmen

Company Saddington & Baynes
Founded 1991
Company website www.saddingtonbaynes.com
Country UK
Expertise Creative retouching and CGI in advertising
Client list Leo Burnett, Moet & Chandon, Nissan Europe, Alpha Romeo, Honda Europe
Software used Maya, mental ray and Photoshop

> To ensure that we stayed within the budget, we replaced the female model's face with a photoreal computer-generated one in order to reduce the costs associated with model release fees

Chris Christodoulou creative partner and managing director at Saddington & Baynes



The S&B studio origins go back to the beginning of digital retouching in the early Nineties. Chas Saddington and Dick Baynes, with many years of experience in conventional darkroom-based photo composing, embraced the then-new technology and set up the company with one purpose: to be the best retouching company in the world. Chris Christodoulou had worked with both of them as a graphic paintbox artist and was brought in as the company's head retoucher to set up the department.

The company offers a creative eye allied with technical skill. As a studio, S&B makes sure the artists, both in CGI and retouching, have a broad range of creative skills and influences, from architecture, photography, illustration and design through to film, graphic novels, interior design and art.

Christodoulou brings a philosophical approach to the otherwise calculating world of advertising media. It's been his doctrine that as visual artists, they must always question everything they do, because the eye knows and can never be fooled, unless what they create is totally seamless. He maintains that S&B is a company that likes to be challenged, priding itself on creative flair, attention to detail and always going the extra mile for clients, who see it as a creative partner that brings extra qualities and input to every project worked on together. As retouchers, they've been seeing and thinking in 3D for years, even though they work on 2D images. Understanding and interpreting light and shade, distance, perspective and focus are fundamental skills that are needed to bring together multiple components.

3D Artist: *Tell us about your main clients*
Chris Christodoulou: We have a wide spread of regular clients globally and we've been lucky enough to work with many of the world's finest advertising agencies, such as Wieden & Kennedy, Fallon, Goodby, Silverstein & Partners, TBWA, Ogilvy and AMV BBDO. Our direct clients include Honda Motor Europe, Nissan Europe, Moët & Chandon, Alfa Romeo and Bacardi-Martini.

3DA: *S&B was recently contracted to complete the 3D production and retouching on the new Fairy Liquid print campaign. How much creative input did you have on the entire project, or was it a case of the client having a very set idea of what the finished result was meant to be?*
CC: We were provided with sketches for the design of the duck and ducklings, which

A Bell Helicopter. Full production, involving full modelling of all helicopters, photo-sourcing of the locations, CGI rendering and retouching and compositing of all the elements in Photoshop

B Red Bull Racing: CGI was the only flexible and creative solution when creating the environments in record time as location photography wasn't allowed

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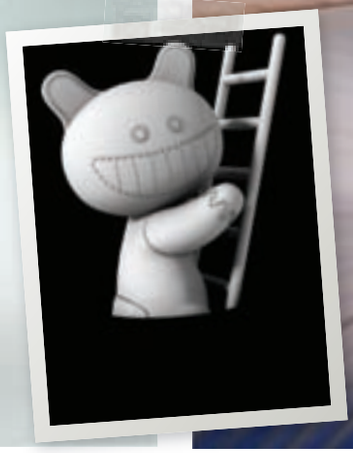

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were put together by the TV post-production team. Our imagery had to be fairly consistent with the TV ad. However, our imagery was due before the TV campaign aired, so we were setting the tone to a degree.

3DA: *What did working on this project entail, what problems did you encounter and how were these resolved?*
CC: The main creative challenge was to get the expressions and interplay between the mother and the ducklings. The technical challenge was to create incredibly high-resolution fluffy powder puff fur, which had to be multidirectional and visually complex. We optimised our solution, but the geometry still ran into billions.

3DA: *What kind of resolution images were you creating for this project and what kind of render times did that require? What kind of hardware did you need to use for this?*
CC: The final images were used for outdoor poster sites and in magazines. We rendered at 15,000 to ensure there was enough resolution for the ducklings in the distance. Render times were about 12 hours, using our Blade Render farm.

3DA: *Maya is used primarily in the TV/film industries, and 3ds Max and CINEMA 4D tend to be used for static images. Why did you use Maya for the Fairy Liquid campaign?*
CC: Maya is a great all-rounder for us, as we work on a wide range of imagery, from cars to characters to photoreal animals. We also use lots of other software, such as ZBrush, Real Flow and Vue when the project calls for it.

3DA: *You were commissioned to create a series of images for Red Bull Racing, based around the production line process for the cars. Why did you create the environments with CGI rather than photography?*
CC: The decision was taken by The Ad Agency, because it was refused permission to shoot at the original location. So it came to us to help build its own one – in record time!

3DA: *What kind of deadline did you have for this project, and how hard was it to create realistic CGI in that time frame?*
CC: The timeline was incredibly tight. We had to design, model, texture, light and render seven different scenes in just three weeks. This makes it very difficult to create photoreal imagery, but we customised our

C Fairy Liquid ducks: Creating high-resolution fluffy fur was a real challenge on this project. It had to be multi-directional and visually complex

D O2 'Fred' Bear. This required an extremely quick turnaround of high-res characters with detailed fur. Fortunately the model itself was quite simple

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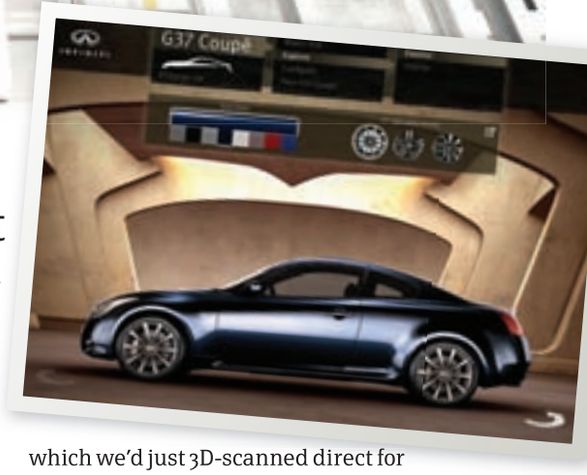

> As image makers, the most important first step is to match the cameras and the lighting, then the rest should follow

workflow to give us maximum flexibility to do this, so we weren't completely reliant on everything being present in the renders. The final images were somewhat stylised in order to give the cars centre stage.

3DA: *How did you go about compositing the actual race cars and drivers into the CGI environment, what issues did that cause and how were they resolved?*
CC: We had a detailed discussion with the photographer prior to the shoot for the cars to ensure we received all information for the cameras and lighting design. As image makers, the most important first step is to match the cameras and lighting, then the rest should follow. Getting the right level of texturing and reflections was an issue, as the client didn't want the environment to distract from the cars. It was more difficult with the drivers, because the shoot had taken place weeks earlier and we had no camera information to work with.

3DA: *On a more human level, how exciting is it to see the Red Bull team doing so well this season after working on this project?*
CC: It's terrific. We've been working on Red Bull images for a few years now and we're glad to have been involved in the launch of the new cars, which are performing so well.

3DA: *The launch of the new Nissan X-Trail resulted in a TV spot by post-production house Mikros in Paris, and a high-res print campaign. What was the role you were allocated and how did you go about filling the creative brief, as this required different branches of CGI and retouching?*
CC: This is an interesting case study, as I personally worked on it. Mikros designed the robots for the TV commercial, but there was an accompanying Pan-European print campaign, which required huge renders for outdoor poster use across multiple formats and countries. Its workflow wasn't geared up for that, so the data was provided for us and we increased the quality for high-res print use. The photographer, Paul Murphy, is a long-time client of ours and we worked closely with him on the campaign. We recommended a previs session before he flew off to the shoot to Norway, using the robot data plus the data for the X-Trail, which we'd just 3D-scanned direct for Nissan. We were able to give Paul detailed previs screenshots and measurements for all formats, and positional guides and lenses for the cars and robots. He knew exactly where the cars and robots would be, and when we got the photography it all fitted exactly to the previs images. Once we'd rendered the robots, my creative retouchers and I brought everything together.

3DA: *A lot of people have trouble getting a decent print out of their inkjet, but S&B went to the next level with a commission for Cathay Pacific's 60th anniversary. This involved producing two 80-metre-long prints for a Hong Kong metro station. This must have created some challenges*
CC: McCann Erickson in Hong Kong, Cathay Pacific's agency, was commemorating its 60th birthday by showing a historic timeline of its fleet, from the first DC-3 in 1946 up to the present day airbus. Many of those aircraft were either in museums or

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> I believe that in two years, 50 per cent of all imagery produced will be done using CGI, replacing more traditional methods

not available, so the Agency turned to us to create the fleet of eight aircrafts in CGI for an enormous metro site in Hong Kong, where the planes were printed at 80 per cent of their actual size, four on each side.

3DA: *What kind of resolution images did you need to use and how was the printing physically implemented?*
CC: Using as much reference as we could find, plus the livery graphics supplied by the agency, we completely modelled eight aircraft from scratch, produced 16,000 textures, rendered each plane at 15,000 and retouched everything in six weeks. RenderMan was our saviour on this one, allowing us to poly-smooth at the render stage. This was incredibly challenging because we also had to be completely accurate down to every detail, as the final images were so big. The images were printed in sequential panels, for which we received detailed blueprints, so we knew where the seams would be. We were proud that the final installation won several awards for Best Use of Outdoor Media in Hong Kong.

3DA: *Going back to cars, you produced the imagery for the Infiniti Motors microsite. How did you create the car models for this?*
CC: Infiniti has been a successful brand in the US for over ten years, but its use of CGI had been mostly limited to interactive web imagery. As this was a European launch, there was insufficient data for the European cars and no data was available from Infiniti in Japan. We were provided with US-spec models of varying quality to start from, but we had to send a photographer to a secret location so he could shoot every exterior and interior facet of the European prototypes, from which we hand-modelled everything. This was a very difficult process because we needed to be signed off from the respective product teams at every stage before we could move on to lighting and rendering.

3DA: *The idea of the site was that the cars could be viewed from any angle and position. What kind of problems did that pose for lighting and shading the images?*
CC: We solved this by using our Real-Time software solution for both the angle studies and the lighting. This meant that once we had sign-off from the client on all colours, angles and lighting, we could produce renders much faster than any offline solution.

3DA: *By virtue of working on a website, the images were a much lower res than print. Did that make you change your approach?*
CC: A typical print image for us is at least 6,000, but we rendered the Infiniti images out at 2,000, even though they appear at half that on the site. It's better to render them bigger and reduce them, as you get more detail.

3DA: *The project for the housing charity Shelter looked interesting. Tell us a little about working with photography team Blinkk and what the brief entailed from a CGI and retouching point of view*
CC: This was our favourite campaign of the year. Blinkk is an amazing team renowned for pushing visual boundaries with its imagery. When we were approached to do it, we jumped at the chance because we could see the potential of the final images, and what a worthwhile cause Shelter is. We aim to do a charity job each year, and this one was especially satisfying from both a creative and personal point of view. We designed the houses, which took several iterations, building in real physics into the cards, so they would bow and sag in places, and we also scanned in lots of old playing

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cards to give us textures and graphics. Once we'd matched the cameras and lighting, the final renders were comped and colour graded to blend with the atmospheric photography. We then needed to make some complex masks in order to nestle the houses into their respective environments.

3DA: *Do you feel CGI offers a more cost-effective way of getting a message across than a traditional on-location photography or video-based advertising project?*
CC: They say that necessity is the mother of invention. This year we've seen a real shift towards CGI-based solutions from our clients.

3DA: *Totally convincing photoreal CGI characters seem to have finally arrived in the cinema. How long do you think it'll be before that kind of advanced CGI work trickles down to the world of ad campaigns?*
CC: Not that long. We've created high-res 3D animals, and have just finished our first face in CGI for an ad campaign for Smirnoff, released in May. The tight turnaround and budget didn't allow for a full photoshoot, but we were able to turn it around, using a combination of CGI and studio photography. But to ensure that we stayed within budget, we replaced the female model's face with a photoreal CG one in order to reduce the costs associated with model release fees.

3DA: *What do you see as future developments for the kind of imagery that a company like S&B can offer?*
CC: The possibilities are endless. I can see us creating locations that don't exist, more and more sophisticated 3D characters, people, landscapes and organic visual effects. I also see a new visual style emerging that's unique to CGI: a fusion of photographic and illustrative styles that sets it apart. I think we've only scratched the surface of what's possible, because CGI now offers a fully digital image workflow to the advertising industry and beyond, whether the image is photographic or illustrative, print or interactive. It's not a one-trick pony, it's a versatile and flexible method that has made previously impossible productions come to life. I believe that in two years, 50 per cent of all imagery produced will be done using CGI, replacing more traditional methods of imagery production. CGI is the most powerful creative tool for print and interactive media to have emerged since digital retouching in the late Eighties.

E SAIC Energy Monster. We designed the character, organised the shoot, casting and styling and brought it all together. The individual elements of monster and human were fairly easy to composite

F Cathay Pacific 60th anniversary image. We modelled eight planes from scratch, creating 16,000 textures and 15,000 renders in six weeks. The finished print was enormous

G Shelter 'House of Cards': This series of striking images is a perfect fusion of CGI and photography. It was commissioned to illustrate the problems in the housing market that Shelter were alleviating

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Enter the Digital Art Zone >

Images courtesy of DAZ 3D

DAZ changes the rules with Studio – an easy-to-learn-and-use content manipulation software for hobbyists and pros. Mark Bremmer reports

Key people DAZ 3D

Chad Smith
Chief marketing officer

Chris Creek
Co-founder

Dan Farr
Co-founder

Rob Whisenant
Lead content, R&D

The company DAZ 3D (www.daz3d.com) tends to confuse denizens of the 3D world. This confusion is not because there is anything wrong with DAZ 3D or its products, but rather because it plays by different rules than most software companies.

While DAZ 3D offers some very capable 3D software for sale, at the core of its business model is an amazingly robust and easy-to-use content manipulation and rendering software called DAZ Studio. Why is this a big deal? It's because DAZ gives the software away for free.

So how do you make 'free' work as a business model? Chief marketing officer Chad Smith explains: "Our co-founders, Dan Farr and Christopher Creek, have been in the 3D business for well over a decade. The common approach to 3D is either to produce the software or produce CG models. Farr and Creek saw an opportunity to build a 3D ecosystem that bridged the gap between the two, and DAZ Studio was created."

This, however, was not done in isolation. DAZ has a highly symbiotic relationship with the software Poser. Smith adds: "We started in the CG content provider model. But when the Poser software started to get passed around like an unwanted stepchild, DAZ had to make a move to guarantee viability if Poser fell apart. DAZ Studio allows for continued use of our content while enabling export to the Poser formats that are supported by most 3D packages."

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Image courtesy of Rob Caswell (www.renderosity.com/homepage.php?page=3&userid=411506)

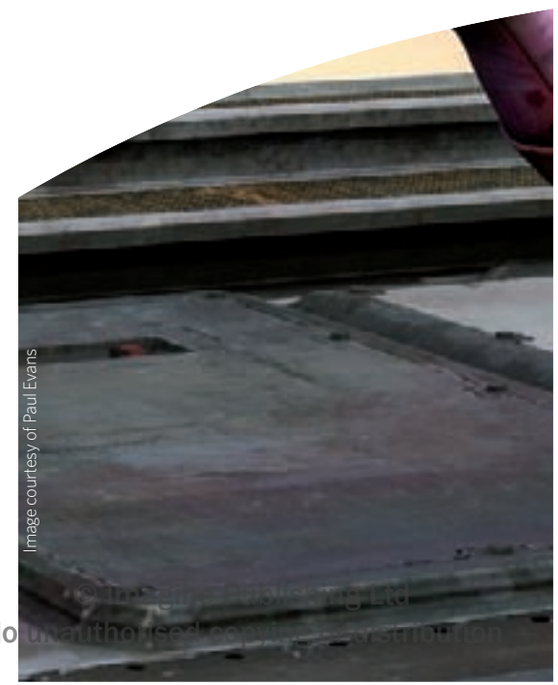

Image courtesy of Paul Evans

Image courtesy of Peter Hauge (www.peterhague.com)

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» *Da Boyze* DAZ's unimesh characters can all be modified by the same morph target sets. The humanoid characters shown in this image are all morphed Michael 4s. Image courtesy of Lee Dunning

Images courtesy of DAZ 3D

Giving it all away

» *Passenger* Image courtesy of Rob Caswell **www.renderosity.com/homepage.php?page=3&userid=411506**

Let's admit it. The 3D community, at least in its professional realm, can be quite insular and self-congratulatory. There are tight user groups built around specific 3D software solutions who look down their noses at any software solution that is something different than what they personally use. And for good reason, as proficiency and fluency in pro software is hard won and quite marketable. The cost and complexity of pro pipeline 3D software prevents anybody but well-educated professional studios from using it. That essentially leaves the rest of the world, all consumers of CG films and media, as an open market available for a lucrative harvest. "Quite a large number of pros do like and use our products," says Smith. "But the growing online virtual communities and really anybody that has access to a computer wants to be part of the CG magic – they've all been affected by it."

"Because of that interest, DAZ's core tenant is bringing 3D to the masses and not just any 3D but human 3D – the most difficult to produce of all!" Enter Rob Whisenant, lead for DAZ research and development of content. In conjunction with Smith, Whisenant looked at DAZ Studio as a community entry point and then devised a migration path for DAZ consumers. "One of the strengths DAZ has is the no-cost entry into the world of 3D," Smith remarks. "With no cost or risk involved, combined with the 'free model of the week' offering, not only can consumers try 3D but they also have a library of free content to use with their human and animal models. Users must register to download free content; at the last count we had over one million registered users.

"Once consumers discover how easy DAZ Studio is to use and create remarkable scenes with, they do purchase additional content." But that is not the endgame for the DAZ strategy, "Of this new CG content-consuming public, a certain amount want to actually begin making things for their scenes that aren't available in the extensive DAZ library. These users migrate to our other software and begin actually creating content for

> "Once consumers discover how easy DAZ Studio is to use, they do purchase additional content"
>
> **Chad Smith** – chief marketing officer

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» markplatz
Although Studio is synonymous with character rendering, because it supports standard format models it can render buidlings as well

sale through DAZ. These digital artists are already well respected by the DAZ artists' community by previous exposure, and when they produce content they have a consumer base that is predisposed to buy what they make. Obviously, this is beneficial to everyone involved."

By the time this magazine is published, DAZ Studio 3 will be available. There will be two variations of this: regular Studio 3 and the new Studio 3 Advanced. The regular edition of DAZ Studio will continue to be offered for free. However, the new DAZ Studio Advanced will have a price tag (not determined at the time of writing), as Smith explains: "The hobbyist users will be very excited to see the new features. However, the professional-level users will see robust Collada and FBX exchange formats. Pro-level exportability simply requires additional development and expense."

Images courtesy of DAZ 3D

But what makes this new release a must-have? Smith continues: "Many times professionals focus on technical integration features and 'me-too' requests, missing the most obvious things that would actually improve the product. In working with our hobby focus groups, we discovered a huge thumbs up for the new Character Blending tools. DAZ Studio has had our pose blending tool called Puppeteer for some time, which lets users easily animate between individual poses of their design and choice.

"However, our latest human figures – Michael 4, Vicki 4 and The Freak 4 – are based upon our unimesh foundation. That means users can blend single source morphs on all of these new characters. Our focus group participants were converting our unimesh base characters into new characters that we would never have even imagined or predicted. Ethnic traits, musculature, body types and even gender can now be universally applied or changed."

Poser compatibility

Studio is compatible with Poser

DAZ got its start riding on the coat-tails of Poser and its introduction of human character animation. Smith remarks: "Poser was truly groundbreaking. Never before had animating human CG content been so accessible. Becoming a Poser content provider was just good business." But successful software with large, active and loyal followings are not immune from improvements to corporate structuring.

MetaCreations, one-time owner of Poser, Painter and Carrara/RayDream Studio, divested itself of all but a single online core technology and content-providing service. DAZ 3D picked up Carrara, Corel grabbed Painter and several companies bought and sold Poser. As a result, Poser has seen no real improvements for several years – an eternity in software years. That said, DAZ Studio still imports the Poser formats and exports to Collada. Studio 3 will export to FBX also.

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Images courtesy of DAZ 3D

The DAZ Studio community

» ***The dragon slayers*** Image courtesy of DAZ 3D

DAZ likes professional users. They're smart, know what they want and know how to think and work with CG 3D. But many pro software communities are not particularly warm to new users, whether they are entering the professional market or a serious hobbyist. Consequently, frustration with actually learning how to use CG software can be high, as basic questions about navigating three-dimensional space or render resolutions are often ignored.

» ***Cheesecake*** Image courtesy of Rob Caswell **www.renderosity.com/homepage.php?page=3&userid=411506**

This is where there is a definite method to the madness for the DAZ Studio solution. On its own site, DAZ 3D has community forums and galleries for each of its software solutions. This is nothing unusual. However, upon visiting the forums, you will notice a high contingency of new users and newbie questions. These questions are usually answered within minutes by other users. Now that is something that you don't see in many other 3D software forums. Why is this so? DAZ simply doesn't have the culture of exclusivity built around it that other 3D software does. The communities are largely comprised of new and moderately experienced users that themselves were newbies not too long ago. More advanced users are engaged because they simply love 3D and have a helping attitude. This brothers-in-arms mentality has fostered a very active and helpful user base.

DAZ has taken this mentality one step further. It's one thing to create a community base around your core software, but completely another to build a community simply for nonprofessional and professional CG artists to exhibit their personal muses. Known as the ArtZone (**http://artzone.daz3d.com/**), this community has strong DAZ product leanings but it's not a forum-based community and does allow for any type of art exhibition. This is a gallery-based community and that has a totally different flavour altogether.

Forum-based communities are prone to certain very active members that sometimes are helpful, and sometimes not. They are moderated. Comments and subjects are controlled. On the other hand, gallery-based communities really tend to focus on the end results where images and animations are king. Everything else is secondary. The ArtZone community has an eclectic mix of amateur and pro-level users. While not restricted to those using DAZ and Poser products or corresponding imagery, there is a high preponderance of DAZ users.

This has proven to be a hit with users on several levels. First, using the social networking paradigm, users can easily locate and follow other users with similar interests both in subject matter and imagery. Twitter-like announcements can be made and are communicated to other users' homepages.

Secondly, it allows for a relatively independent, self-regulating collection of users who are free to exhibit their work and query other users to models, props and accessories used via chat dialogs or topics taken to the forums.

Essential websites

DAZ Studio and DAZ's 3D content resources are wonderful. But they are not all there is. There are other providers of Poser-based content, Poser-based meaning that it also uses the Poser rigging, conforming schemes and formats. Additionally, like Poser, DAZ Studio reads the common exchange format of Wavefront (.obj) and imports BioVision (.bvh) motion files for animation. Consequently, finding and setting up additional props, objects and motion in DAZ scenes merits a trip out to the web. While there is plenty of high-quality pay-for .obj format content, most free content has dubious quality. Free providers like 3Divia (**www.3dvia.com**) and TurboSquid's free offerings (**www.turbosquid.com**) are worth taking a look at.

Additional characters and character textures can be found at the recently retooled ContentParadise (run by Poser's new owners, SmithMicro) at **www.contentparadise.com** and Mech4D (**www.mec4d.com**). A wide selection of rigged and unrigged Poser content can also be found at community-based Renderosity (**www.renderosity.com**).

For BioVision motion capture, you can investigate TurboSquid, mocapdata.com (free and purchase from **www.mocapdata.com**), The Forge (purchase from **www.the-forge.ie**) and Wisconsin University (free from **http://pages.cs.wisc.edu/~pingelm/ComputerAnimation/Motions/bvh**).

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» *Solitude*
Image courtesy of Rob Caswell
www.renderosity.com/homepage.php?page=3&userid=411506

» *The last dragon slayer*
Image courtesy of Peter Hauge

> I downloaded DAZ Studio and really started having fun! Now I consider myself an aspiring artist and I'm trying to start a small business with my art
>
> **Kodak3D,** DAZ Studio user

Finally, DAZ hosts periodic Special Event moderated chats with CG professionals and purveyors that have nothing to do with DAZ products but have everything to do with how to improve CG scenes, tips and tricks, industry insider news and more.

While none of this is novel or particularly unique, it's the sum of the whole that makes the total DAZ experience incredible valuable to its user base, both consumer and provider.

Another interesting component to the DAZ community is the Paid Artists or PAs as they are known in the community. These are individuals that freely have been involved in the DAZ community but have continued down the migration path that DAZ premeditated and have now become providers of CG content to the DAZ community. These artists come in all flavours, from fantasy to automotive to costume to architectural. Highly respected within the DAZ ecosystem for their imagery and/or helpfulness, these artists have very active followings of DAZ customers who essentially become fans of the artist and continuously buy new content, eagerly awaiting the next release. In fact, the PAs receive direct feedback and user requests, allowing them to tailor their efforts at known targets. Everybody wins. DAZ makes money, the PAs make money and the consumers get what they want. It's tough to find fault with a system like that. In fact, in the DAZ Studio forum, user Fisty wrote: "At first I was looking for a way to make better quality character portraits for my gamer friends – I got that! Eventually, it led to a good way for me to supplement our family's income, support my hobby and have friends to talk to and create with."

By eliminating entry-point barriers (usually cost) from 3D, DAZ has fostered a kind of good will and user loyalty that is hard to match in the pay-for 3D realm.

» *Nightgown*
Image courtesy of Anita Lee www.anita-lee.net

Image courtesy of DAZ 3D

» *Expressions*
One of the novel features of Studio is that characters can have morph injections that change their expressions and appearance

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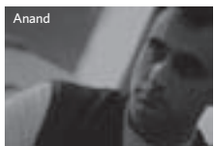
Duncan Evans talks to Anshul and Anand Kapoor about combining arch viz and TV

Forging into the East

> We were keen to create an animation that would grab the viewer and take them on a journey through the new airport
>
> **Anand Kapoor**
> Co-director, The Image Foundry

Company The Image Foundry
Website www.imagefoundry.co.uk
Country UK, UAE, India
Software used 3ds Max
Expertise Architecture, products, media, television
Client list The InterContinental Hotels Group, The Government of Oman, HOK Associates, Emaar Properties, The Fairmont Hotel Group, Granada, BBC, National Geographic, The Discovery Channel, Channel 5, Sky Television, Channel 4 and Atlantic Productions



Most image-based companies sit in either the architectural visualisation camp or the TV/film/game camp, rarely crossing over. Not so The Image Foundry – it not only reaches across the divide in terms of content, but is also equally placed between Europe and the Middle East and Asia. The company was founded in 2003 by Anshul and Anand Kapoor, with just four artists who had a passion for visualising architectural and media designs in 3D. Anshul heads up the UK office in Manchester and co-heads the satellite operation in Dubai, while Anand co-manages Dubai, and heads up the Delhi and Mumbai studios. The Image Foundry now has a team of over 30 artists and is at the forefront of 3D graphic design and animation.

3D Artist: *What are the main services you offer and areas of CGI that you cover?*
Anand: We produce 3D visualisations for architectural developments and media animations.
Anshul: The company is now expanding and moving into the game asset industry.

3DA: *Is there a particular style or ethos that you bring to your projects?*
Anshul: We bring together technical expertise and creative skills to create a boutique yet realistic style.

3DA: *Tell us about your main clients*
Anshul: On the architectural side, our main clients include many top UK property developers and international organisations, including The InterContinental Hotels Group, The Government of Oman, HOK Associates, Emaar Properties and The Fairmont Hotel Group.
Anand: On the media side there's Granada, BBC, National Geographic, The Discovery Channel, Channel 5, Sky Television, Channel 4 and Atlantic Productions.

3DA: *Your portfolio covers a broad range of disciplines. Are your artists skilled across all areas or do you have specialist groups?*
Anshul: We have people specialised in certain disciplines (animation, texturing, lighting), but they could work in any area of our broad-range projects. Their expertise will be utilised wherever it's needed. All projects need to be lit for a certain look, and the artist will use their skills to create this.
Anand: To clarify, the studio has within it key departments with specialist skills. In

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each department there are junior artists, artists, senior artists and team leaders.

3DA: *What does each office in the UK, UAE and India do, and why do you have them?*
Anshul: Our cross-continental setup means clients have a contact in India or the UK 24 hours a day, and we can produce award-winning, high-quality CGI at competitive prices. The team's worldwide influences and experience add a unique edge to our work.
Anand: The India studio was set up as a back office for the UK with the intention of developing it, but this happened faster than we expected. The studio is now client-facing, generating its own business and acting independently.
Anshul: The satellite operation in UAE deals with requests within the area and acts as a link to the UK and India studios.

3DA: *Do you use different tools for different products, for example, Maya for TV and animation and 3ds Max for architecture?*
Anshul: We use 3ds Max as our 3D package, plus a variety of other software. Our staff need to be versatile in three or four software packages to deal with the complexities and styles of the different projects.

3DA: *How many people typically work on a project in-house ?*
Anand: Depending on the complexity, we could have as few as five or as many as 20 working a single project. Media work tends to have small, focused teams. Architecture has teams of eight to ten, and television work could extend to the whole office.

3DA: *You were commissioned to produce a series of images for the Ajman One project in the UAE and the Festival City project in Dubai. What can you tell us about these?*
Anshul: We've spent a lot of time in the Middle East, making contacts and raising the company's profile. The business culture in the Middle East is based on relationships – and the way to gain the trust of potential clients is to be based as much as possible in the market itself. We made many contacts at trade shows and by good old-fashioned cold calling. In itself it's not enough to just make an initial contact with potential clients, as even showing them your best work doesn't lead to a sale. You need to keep in contact and show them your new work as often as possible to gain their trust and respect. We won these two projects several months after initially meeting both clients.

The brief for the Dubai Festival City was to produce an animation of the proposed extension to the existing mall, which would house luxury brands. The animation was required for a large retail show in Cannes, France, called MIPIM. From the initial brief to completion, we were given four weeks to turn around a three-minute animation that showcased the exterior and interior of the mall. Due to the tight turnaround time, we provided the client with a detailed story

A This is one of the images which were produced to show off the client's stone flooring products as the cost of photography would have been prohibitive

B Interior view of the mall development at Festival City in Dubai. The brief was to produce and animation of the proposed extension to the existing facility

C An exclusive boutique development called Elle based in Antigua. We produced several stills and an animation for the project

D The Taj Mahal, rendered for a TV program. The Image Foundry has been well placed to ride the recession by working in a wide range of disciplines

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Key Project
New Delhi Airport

Delhi Airport was won through recommendations we received in Dubai. The power of personal recommendation is totally underrated. We were asked to come in and pitch our proposal for the look and feel of the walkthrough. We were keen to create an animation that would grab the viewer and take them on a journey through the new airport. We did this by using a mix of first-person and third-person cameras, which allowed us to show different perspectives of quite complicated architecture and processes. Technically, we had to co-ordinate with several departments in order to achieve the final look and ensure it was right. We were also asked to add artistic elements, which allowed us a certain amount of artistic licence in order to create a piece that was finally unveiled to the world in the presence of the Aviation minister and the President.

> “Many companies run before they can walk, but we’re moving forward only after putting key personnel in place”

E This is the interior for an apartment on a future waterfront project in the United Arab Emirates

board, so we’d be sure exactly what we’d be modelling and showing in the animation and, more importantly, what would be achievable with the four-week turnaround.

The brief for Ajman One was to produce several stills, including a master view of the main site for the new hotel, office and conference centre to be released for sale. As we’d met the client several times before, they were happy with us working via email and conference calls. The client had specific ideas on how they wanted to represent the development, so we provided them with some block model camera views so we could ascertain what we’d need to model and get an indication of what they wanted to achieve from the images.

Our pre-production department remained in contact with us and the clients, gathering photographic and CGI images to explain the look and feel the clients wanted. With the Ajman One project, the client wanted a

F The Ajman Project. This was a major project for us, requiring several stills and a master view of the main site. Our pre-production dept worked with us and the clients, gathering photos and CGI

G This was produced for the Intercontinental Hotel Chain for a hotel of the future campaign. It was used in a worldwide campaign and got some great coverage in the press

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night shot as well as an image where the CGI was composited into a photograph.

The clients provided the CAD files and a materials schedule for the building. Our modelling department stripped the files to a usable template to start the CGI buildings.

With both projects, once a look was decided upon, the texturing department started creating and gathering the materials requested by the client.

The post-production department was where the look for both projects was developed. Here we create the lighting rigs and environment to give a realistic look to the textures and scene.

3DA: *Can you see The Image Foundry getting more involved in architecture work, especially in the Middle East?*
Anshul: We're heavily involved in architectural work, but due to the recent downturn there are fewer developments that need 3D visualisations. Although the Middle East hasn't been hit as much as the UK, things have slowed down. However, we have worked on projects such as Festival City, Ajman One and images for a reclaimed island off the coast of Bahrain.

3DA: *The global economy has taken a massive hit lately. Have you found that by offering a diverse portfolio you have been well placed to get through the downturn?*
Anand: Yes, due to the company's range of skills and talent we've been able to focus on other areas such as media and gaming.

3DA: *What are your plans for the company in the future? Do you see a move into TV and media work, or even the games field?*
Anshul: I wouldn't say a move, rather an expansion into the gaming field. We already have the right skills and setup to cater for gaming, and we're strengthening our core competencies on the film and TV front.
Anshul: Following on with our ethos of using Delhi as a front office, we're attracting key talent to work with us to forge links with Bollywood and thereafter Hollywood. While this is important, we're not being naive to dismiss the back-office opportunities that lie within India. We're exploring the markets and setting up affiliations with major production houses to take over some of the more labour-intensive elements.

On the media front, we've already attracted key personnel to join hands with us. Miles Bellas, whose credits include *Harry Potter, Lord of the Rings, Titanic* and *The Fifth Element*, has joined as a VFX supervisor, specialising in film. Marco Olivares, who's worked extensively on

G

American and European productions and specialises in ad films, has joined as a VFX supervisor, specialising in ad films and films.
Anshul: Our intention would be for gaming giants to outsource elements to The Image Foundry. We've recently recruited Eric Elms and John Harris, who will head up the gaming section from the UK office. Eric, who co-founded Warthog Games in 1997 and then went on to establish Square Box Vision Europe (SBVE), will manage business development. John has worked on a variety of world-class titles. He joins The Image Foundry as art manager.
Anand: The company is in an exciting position to move forward. Many companies run before they can walk, but we're moving forward only after putting key personnel in place. We're always looking to strengthen our teams and bring exceptional people on board.

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Model, texture, light and render

Step by step: Make a mini Davy Jones

No More Wine 2009

> This picture was created with the goal to entertain people and learn more about ZBrush and mental ray renders. I wanted a composition with a strong impact and a funny story!

Simon Blanc is a 26-year-old employee at Blur Studio

In this tutorial, I'm going to show you every step of how *No More Wine* was created, and how I used software like ZBrush, Photoshop and 3ds Max to get to the final picture.

The idea of doing a little Davy Jones came when I was playing with the great ZSpheres tool in ZBrush. Although I'm not used to doing fan art, this time I couldn't resist doing a funny version of this character, who is the most impressive one I have ever seen in a movie. It was always going to be hard to do something as good as the original, so I tried to use my skills in 3D while learning more about ZBrush and mental ray to create a picture as fun and as well done as possible.

From a personal perspective, my goal quickly became to create a funny piece with a character that everybody likes in an unknown situation, also with a side story from the world of movies.

I didn't need to use a lot of software to achieve my goal; working on several computers (home, work, etc), I always try to use as few plug-ins and third-party software as I can in order to avoid the deadly 'missing plug-in' issue.

It was also better to limit the software used in the project in order to avoid wasting time going from one to another, exporting and importing content.

I paid a lot of attention on keeping things simple; the main goal was to forget the technical aspect of 3D to focus on the funny situation, and that's why I spent a lot of time working on the character's pose and face.

ZBrush has been a great tool to give life to the character, allowing me to pose him and work on his face as simple as it can be, forgetting the technical side of 3D to concentrate on feelings!

Step by step

Easy-to-follow guides take you from concept to the final render

Artist info

Simon Blanc

3DArtistonline
Username: simonblanc

Personal portfolio site
www.simonblanc.com

Country France

Software used ZBrush, 3ds Max, Photoshop

Expertise Lighting, rendering and compositing are my main skills, but I also love modelling, texturing and basically everything!

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> The main goal was to forget the technical aspect of 3D to focus on the funny situation

Software used in this piece

ZBrush · 3ds Max · Photoshop

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Concepts

Rough ideas to designing the model

01 Instead of beginning a project by drawing, as is tradition, I started this one inside ZBrush 3.1 while playing with the ZSpheres. They represent a great tool to experiment with conceptual characters, allowing you to create a model in no time at all and quickly being able to see if the proportions and shapes are going to work in 3D. The idea came when I saw all these tentacles on the sphere and saw the little Davy Jones in my head!

02 As I had a clear idea from the beginning, I made some quick notes of the details I wanted to create. I wanted to start realising the image in my head as soon as possible. The place where the scene would take place and the mood were obvious to me, so I started to think about elements to put in the image in order to bring out the fun and quirky side of *No More Wine*.

03 I kept sketching new ideas while I was making the picture; the more I worked on this picture, the more new ideas I had about scene details, characters to add, fun props, etc. The screenshot shows speed notes made to help me remember the main ideas, as the 3D process is slow and can easily make you forget them.

Modelling

How the elements were put together

04 The modelling step was one of the most fun parts of making this picture. It was built with lots of rings stacked on top of each other, which formed the basic body shape.

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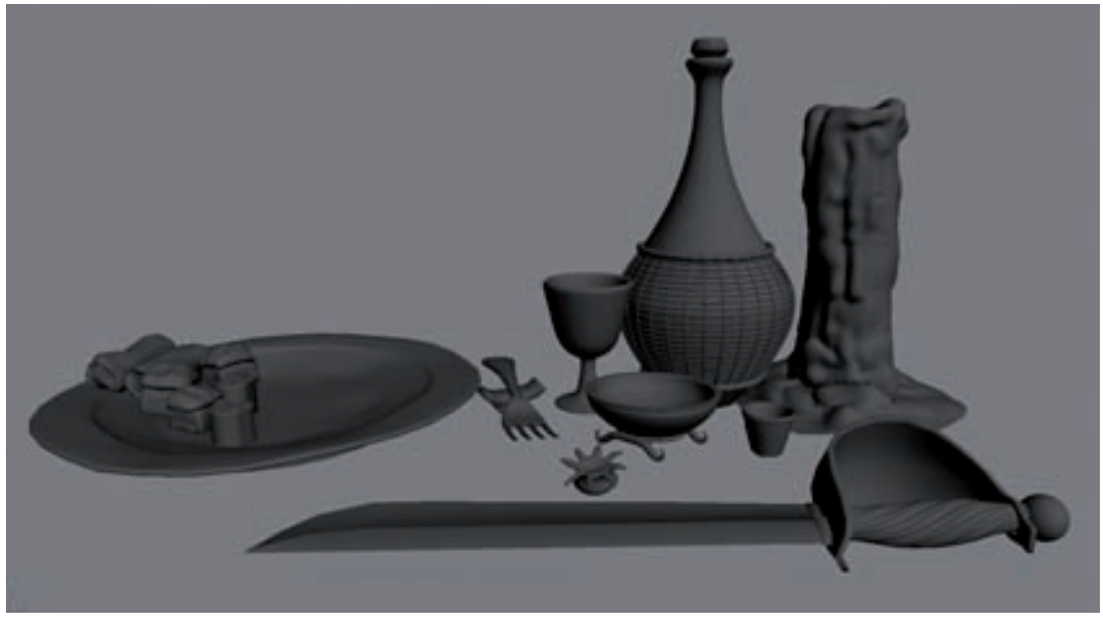
More modelling

Applying texture and creating props

05 **Once done with** the ZSphere body, I added the hat made in 3ds Max with poly modelling and started the sculpting stage, defining the main volumes and detailing the tentacles and body using ZBrush's brushes and tools. The Transpose tool was also very useful in changing the character's pose, and I went through quite a few different attitudes before I found the final one. I completed the modelling by finalising the facial expression and details. The Move brush helped a lot to get his funny face, as you can change very subtle things and work on the asymmetry to give your character a great expression in no time. Even with the amount of details, I also tried to keep it cartoonish by keeping the main shapes simple and fluid, and applied more attention with details to the areas where the focus would be.

06 **Once I was** happy with my model, I started texturing it inside ZBrush. I wanted to keep the spontaneous workflow that ZBrush provided me without worrying about unwarping my model first. I used a classical technique, painting with successive colour overlays like in the old oil paintings, using mainly the Spray function to add details quickly. The veins mask was helpful to add veins under the skin that will be overlaid afterwards but stay visible in a subtle way. After the texture map was exported in bitmap, I added some details to it in Photoshop using skin and organic textures

07 **I also created** some props in 3ds Max, like the wine bottle, table, sword, etc, and textured them in Photoshop. The small octopus and sushi were done in ZBrush, starting from ZSpheres like the main character. All the shaders are based on mental ray Arch & Design Material presets tweaked for the scene's needs, except the little Davy Jones, which was done with the SSS Fast Skin shader. One of the big lessons I learnt making this picture is that the most important things for a good render are the modelling and shaders, as they need to react to the lighting in a good way.



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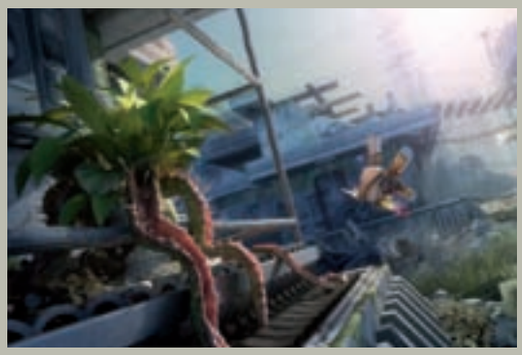
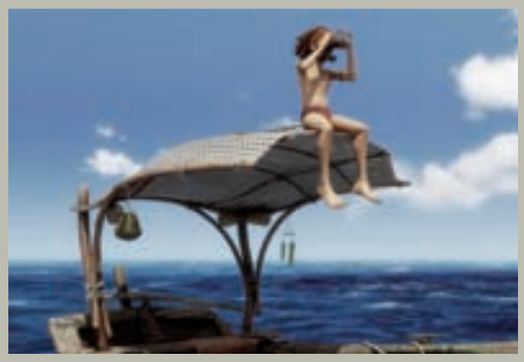
Artist Showcase

Simon Blanc

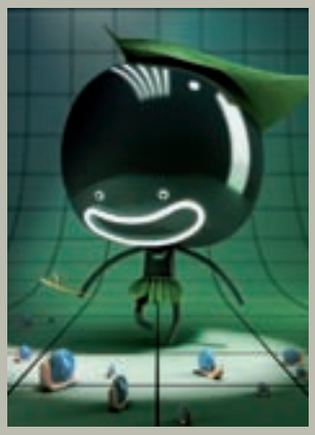
I discovered 3D when I was a web designer and applied to Supinfocom, the computer graphics university. I then went to Spain to work for six months while waiting for my visa to come at Blur Studio. I like pretty much everything in the making of a 3D movie, from concept art to post-production.



Arain **ZBrush, 3ds Max, Digital Fusion (2007)**
Arain started with the idea of a small robot bird. I wanted to put it in a special environment, an old city that was probably destroyed by humans, where nature would be back stronger and where intelligent robots would form a new relationship with it.



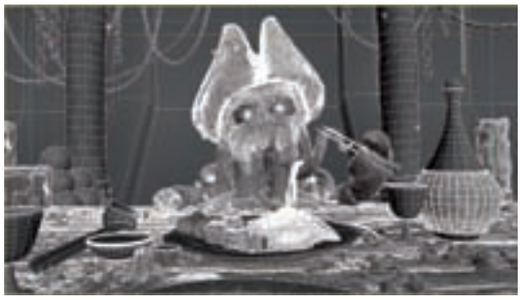
'Moutons'
3ds Max, After Effects, Photoshop (2005/2006)
'Moutons' is a short film I did with Arnaud Valette and Vivien Cabrol while studying at Supinfocom in France. We were learning 3ds Max at the same time so it was quite a challenge.



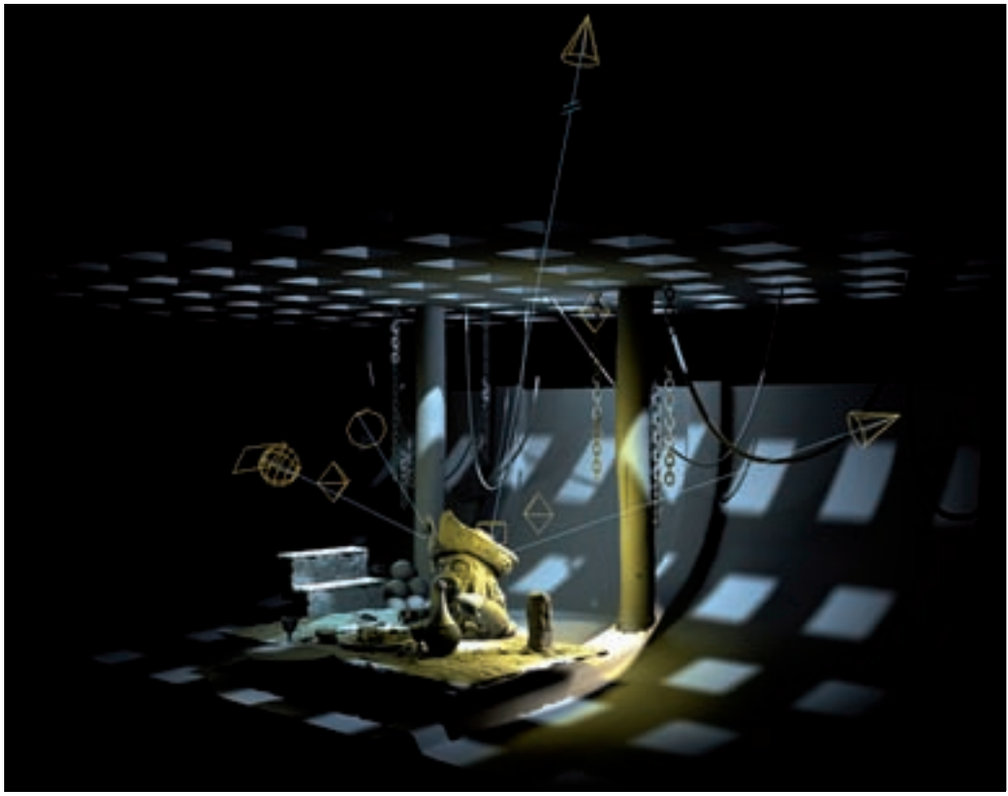
Bonom **3ds Max, V-Ray (2006)**
Bonom was done for the CGSphere contest. While I tried to create a story with the minimal amount of elements, the mood and weirdness were the most important things. I achieved that using mostly the lighting, shaders and colours. As with *No More Wine*, I added some small animals to bring interest to the story.

Lighting and rendering

Building the scene up



08 **Once I had** my main elements, I started to build the scene. I kept it simple, adding just what I needed to bring the weirdness and fun to the little Davy Jones's world. While I'm building the scene, I can't refrain from working the lighting as soon as possible, as it helps me in two ways. First, it stops me from getting bored early on, and second of all it helps me to know where I want to put the viewer's attention.



09 **The rendering step** was the longest, because I wanted to do something credible. When you take Davy Jones as a reference, you have to do something cool! I used mainly mental ray Area Spots and Area Lights to light the scene with Final Gather to add the light bounces, even if I kept some very dark areas in the picture. The task was made a lot easier because of the small environment and the fact that it was a still picture.

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Post-production work

Putting the final touches in place

10 The shader part was a complicated one. Because I was more or less new to mental ray, I spent a lot of time working on the materials. I like spending time on shaders; watching photo references is very important, as you have to view several pictures to understand the ways that materials react to light to be able to reproduce them in 3D. In this scene, I did not do any displacement. As it's a still picture, I have only used Normal maps and high-res meshes to keep my ZBrush sculpt details as much as possible.

Brushing up the detail

My main criteria for this picture was to get a strong personality across in this cartoon character, but with a good technical level of modelling and rendering to make it feel alive. In ZBrush I found the perfect tool to create the model without thinking too much about the technical aspects. The rendering step was the longest because it took me a lot more reflection to get where I wanted to. The Subsurface material from mental ray is one of the best, but it's sometimes hard to set up, mainly because it reacts really differently with the scene scale. If your scene was wrong or wasn't on a real-world scale, you have to spend a lot more time looking for good subsurface parameters.

For me, the most important settings are the first three colours and the specular or reflection parameters; I usually don't touch the other settings. With regards to the maps, I used two layers of skin colour (surface, second) and Bump map or Normal maps, but a Weight map is also very useful to bring a bit more realism to the subsurface effect.

2-3 hours render time
Resolution: 4,900 x 3,500

11 Finally, I rendered several passes to create the final picture with Photoshop. I tried to get a good render base with the Beauty pass, while I only used Ambient Occlusion, depth of field, reflection and some masks to tweak the picture during post-production.

12 I love this step of post-production, when you finish your image and bring the picture to its final resting place. Creating a still picture is always a good exercise to learn how to push the details further, combining all the aspects of 3D. I did a lot of colour changes, taking care of the visibility and the hues between all the objects. I have also added some real picture elements to the final version of *No More Wine*.

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I made this...

Incredible 3D artists take us behind their artwork

Artistinfo

Denis Tolkishevsky

3DArtistonline

Username: GTsw

Personal portfolio site
www.to3d.ru

Country Russia

Software used 3d Max, V-Ray, Photoshop

> The base image with a resolution of 2,500 x 4,000 was rendered in about four hours on my computer (using a Quad-2400 and 8GB of memory). I used VraySincFilter for the anti-aliasing filter, Irradiance map for the primary GI engine and Light cache for the secondary GI engine

Software used in this piece

3ds Max | Mudbox | V-Ray | Photoshop

I used a planar VrayLight for the basic light source (light from a window) in the scene. To make the light source look like a window, I placed two crossed boxes to simulate a window. For the environmental light and reflections, I used a HDRI map

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PROTOtype 2009

I used polymodelling to model almost all the details of the scene. I usually start by creating primitives (boxes, cylinders, planes, etc). I applied an Edit modifier poly and achieved the necessary form and specification with polymodelling tools.

I have not had special education, so I do not know all the rules of composition. Usually, I follow my wife's intuition and advice

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Modelling rendering, and lighting

Create a sexy, stylised femme fatale

Mistress Lili 2009

> Here, I created a stylised female figure in the style of a doll or cartoon, but with a hint of fetish culture and a certain reactionary air

Rebeca Puebla Paniagua is a freelance 3D character artist

Step by step

Easy-to-follow guides take you from concept to the final render

Artist info

Rebeca Puebla Paniagua

3DArtistonline
Username: Trinnity

Personal portfolio site http://rebecapuebla.blogspot.com/

Country Spain

Software used 3ds Max 2009, Photoshop CS3, ZBrush 3.1

Expertise My method of choice when creating characters is modelling – it is my speciality

Software used in this piece

ZBrush 3.1 | 3ds Max | Photoshop

I wanted to create an illustration in the style of a pin-up dominatrix dressed in latex but with a certain vintage touch. For this, I utilised some materials that are supplied with 3ds Max, such as latex and vinyl, with very good results since the suit does not require texture. The wrinkles that I modelled in ZBrush will also introduce realism and detail.

Normally, a Displacement map created in ZBrush can cause problems when applying it to the model in 3ds Max, as well as considerably enlarging the render time. This is avoided by importing the model directly into ZBrush, just as long as the number of polygons to be imported doesn't exceed one million.

To make the character prominent in diffuse and smooth lighting, I used three Photometric lights and the FG/MR options in 3ds Max. I also obtained smooth and clear skin using the Fast Skin mi material with very little effort indeed.

The hair was created using the Hair and Fur plug-in, which, although it increased the render time a lot, contributed to a more realistic image.

Concepts

Rough ideas to designing the model

01 **Once I found** the material I wanted, I began to work on a simple pose and a base model that could be reused or posed again easily. I don't tend to work with concept sketches, because I start with the idea for the model once I have that, using artwork and historical references. I then used Photoshop to retouch the model to bring it closer to the original idea.

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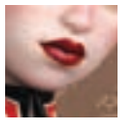
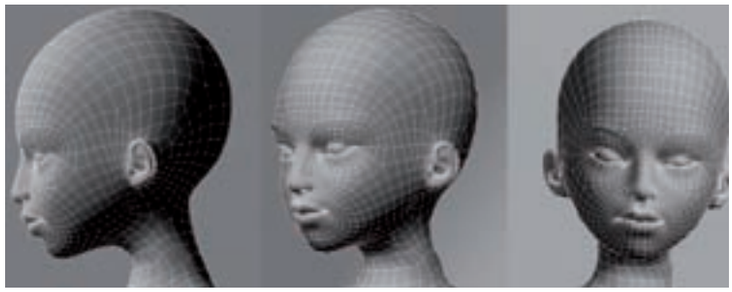
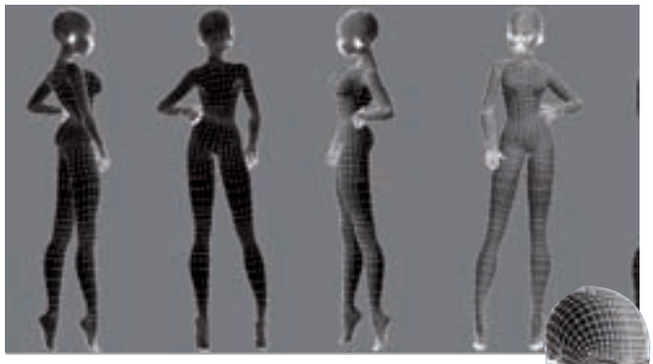


Modelling

Everything from head to toe



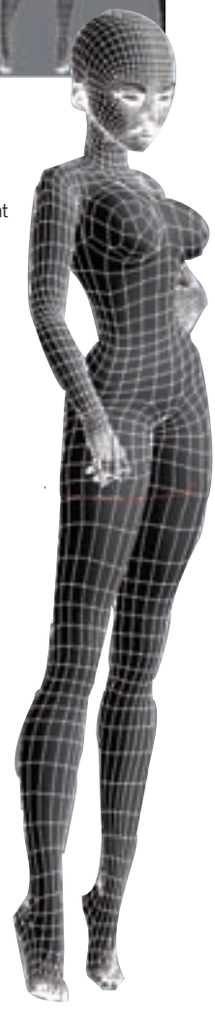


Dress code

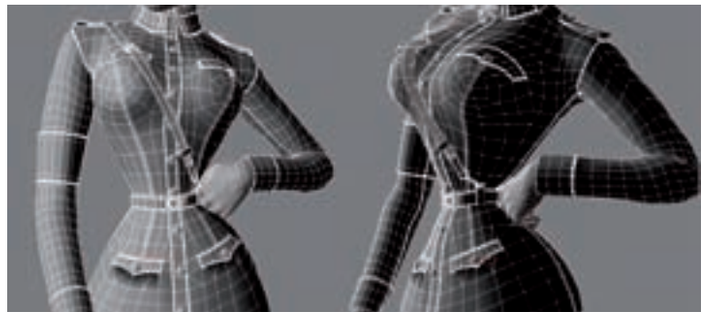
I wanted to create a character styled like a pin-up model but with an aesthetic reference to the fetish culture of today. Thinking of a dark, maybe medical, definitely military dress code, I found some references of girls in latex, high heels, etc. Lili's clothing was to be the centre of attention, so I wanted something sober with black and red colours. Aside from that the uniform needed to emphasise the dominatrix aspect, so I referenced some classic uniforms.

02 **Moving on to** the head, it's best to reuse a base that has already been revised so that the structure and the loops in the mouth and eyes are aligned in the correct way. After that's done, I focused on the shape and proportions that I wanted, which in this case meant some big eyes, small but full lips and a round face.

03 **It is important** to obtain the shape of the body base that you want with a small number of polygons, as it is easier to change something at this stage. Because you are not going to animate the character, the mesh and the quads don't have to be perfect, but a coherent mesh is necessary to be able to formulate the pose in a simple manner without using rigging.



04 **Once I had** the pose and the proportions of the body, I moved on to the clothes. Although I would be modelling the clothes in ZBrush, I tend to make the dress, flaps and certain details in 3ds Max first as I am able to work better with the wrinkles in ZBrush afterwards.



05 **It's time to** export the mesh base of the body and clothes to ZBrush in order to add wrinkles and other details. The accessories and shoes are modelled in 3ds Max. I created the hair in ZBrush, while I also retouched general shapes and adjusted the proportions in some places until the final shape was found.

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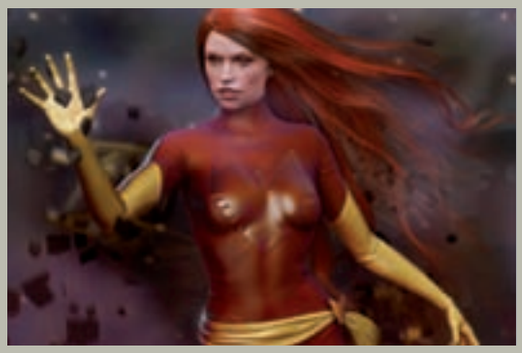
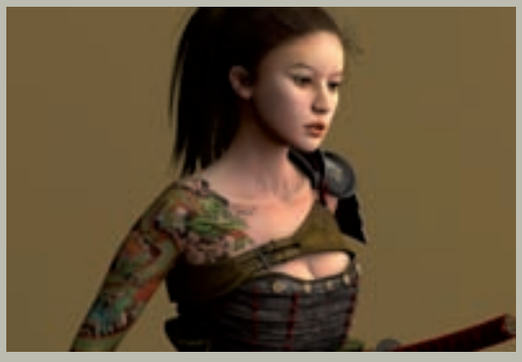
Artist Showcase

Rebeca Puebla Paniagua

I began with 3D in 2002, focusing on the modelling of characters. In 2003, I worked as a modeller on the series *Pocoyo* for Zinkia Entertainment, and after three years became part of Pyro Studios as a character artist. In 2007, I worked on the videogame *Wanted* at Grin BCN and today I work as freelancer.

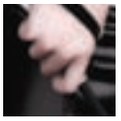


Dark Phoenix **Softimage, 3ds Max, Photoshop, V-Ray, After Effects 2007**
Dark Phoenix was a work inspired by the character of Jean Grey of the X-Men. I combined the typical clothing of the character in the comic with the face and powers of the movie's Jean Grey.



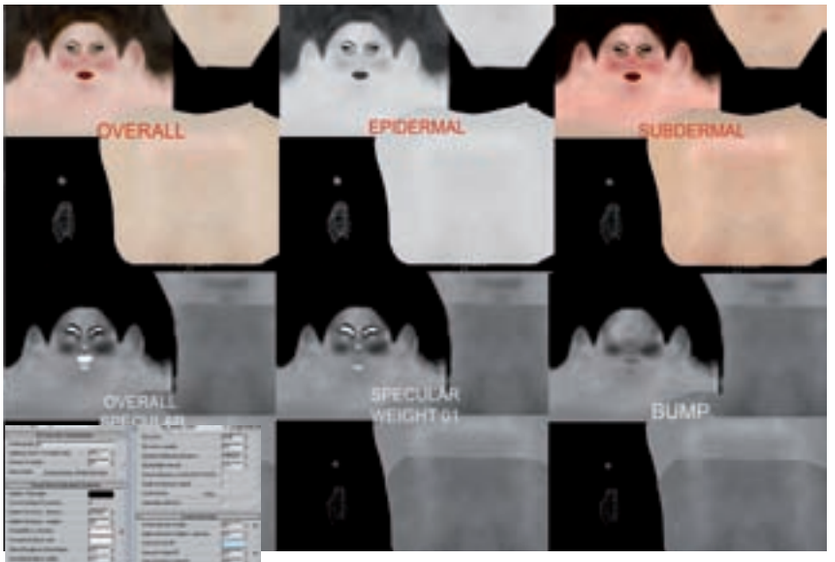
SangYeng **Softimage, mental ray and Photoshop 2005**
This character is a princess warrior with an appearance similar to the *Final Fantasy* characters. The biggest difficulties were the hair (done with Opacity maps), the skin and the creation of the tattoo, which is completely painted by hand in Photoshop.

Cross head **(Wanted) 3ds Max, Photoshop 2008**
This is Cross, one of the characters from *Wanted*. Here, you see the result of the model at a low poly count with the Normal map applied, and it's almost the same as the model at a high poly count. I did the high model and low. The textures were done by my co-worker and friend at Grin BCN, Manuel Usero.



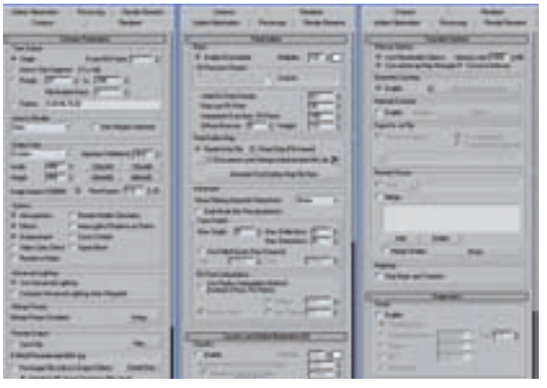
Rendering

It's not what's on the inside that counts…



06 **To make the** skin translucent and smooth, I utilised the material used by Jonas called SSS Fast Skin mi, which, despite having many parameters, is easy to use one time to do a simple skin. The screenshot shows the parameters in each slot. Afterwards, I added a tattoo to her leg that emphasised her role of a dominatrix more.

07 **At the same** time, to create the latex clothes I used the materials that can be found in the Material Editor of 3ds Max, ones that can create different and fantastic surfaces without difficulty. As you can see in the screenshot, you can opt for two different options inside the material templates: latex material and the finish of the floor.



08 **The parameters of** mental ray that I have utilised are practically the ones that come as default. I activated Final Gather, which goes well with most illuminations. Utilise an anti-aliasing intermediate (minimum 0.25, maximum 4) and in Reuse activate the booths FG and Geometry. In Processing, activate all options and increase the memory limit to accelerate the render.

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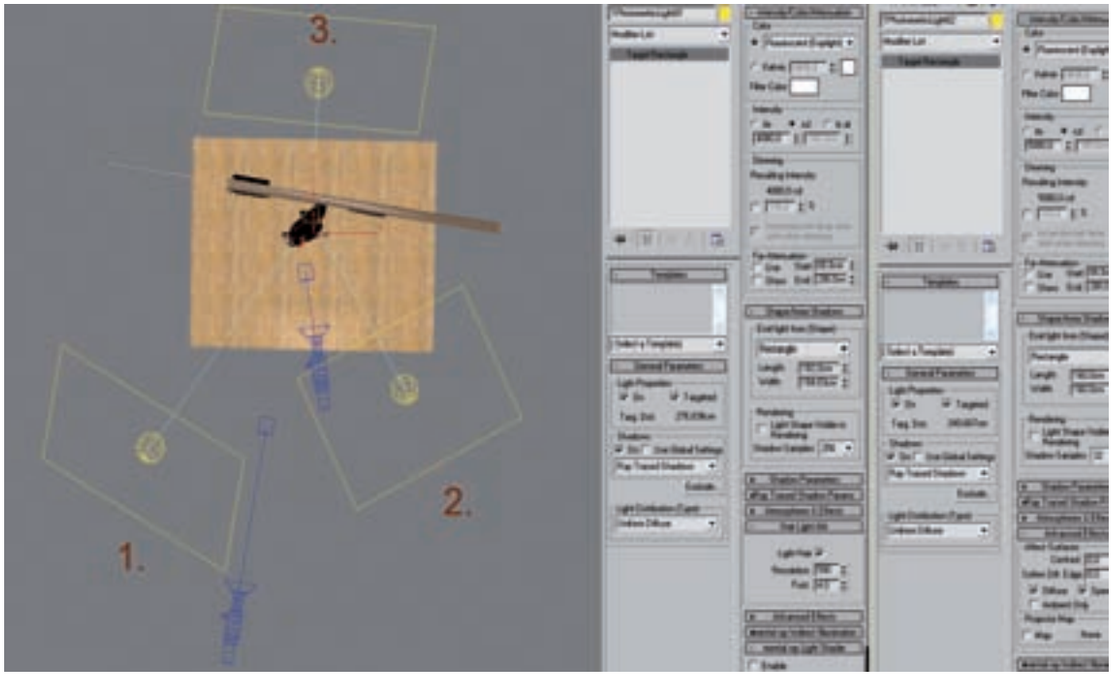
Lighting

Putting the final touches in place

2 hours render time
Resolution: 2055 x 3425

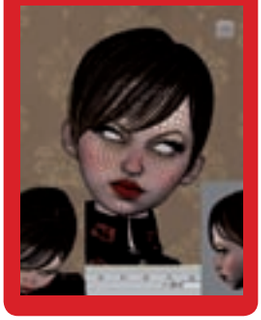
09 **To begin with**, I had the idea of a contrasting illumination with a focus on a strong light as the main illumination, but after some tests I ruled out the idea because the results didn't convince me; with the skin and the latex black, it didn't make certain areas of the clothes visible. I finally opted for the Photometric lights, which contribute a smoother and more diffused light to the illumination.

10 **For the final** illumination I used three lights, as seen in the screenshot. One is for the main focus, followed by a second that has almost the same parameters as I wanted to show my character in the best possible way without creating too much of a contrast. The background light is a backfill with a light intensity of 500cd. The pictures, wall and floor are all integrated in a natural and smooth way.



Hairstyles

At first I modelled the hair in ZBrush, but it didn't convince me in the final illustration. So I decided to test a hairstyle, something limp and trendy with Hair and Fur. The hairdo created with splines is simple and effective, although the render times can be very long. A high Multi Strand count is fantastic to create tufts but increases the time too much, so the best method is to find a middle point between the total number of hairs and the parameters of the Multi Strand.



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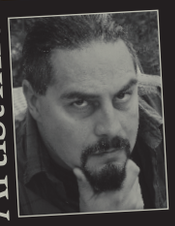
I made this...

Incredible 3D artists take us behind their artwork

Artist info



Daniel Lovas

Personal portfolio site http://lovas.cgsociety.org/
Country Slovenia
Software used CINEMA 4D

A compositional guide, intentionally similar to that of my other illustration, *The Alien Derelict*, was used here. It is a classical composition, based on two fifths or 'thirds' of the format, with the shuttle acting as the area of interest and other compositional lines and elements leading towards it and used to emphasise it

The Rising Tide 2009

The most detailed image of the Sirius binary star system that today's 'advanced' science is able to offer shows just two blurred dots. So it's lucky, really, that we have science fiction!

Set in the late 22nd Century, this image shows a partly terraformed planet orbiting the Sirius binary star system. On it, there's a civil research and observation outpost founded by the ET (European Technate) from Earth. I won't bother you with the rest of the story, as I would rather leave it to your imagination.

> "I used the CINEMA 4D R11 new Advanced Render, which proved fast and reliable – a 1,600px-wide rendering took about five hours to complete"

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Lighting was a bit problematic. There are two main light sources on the scene: the two suns of the binary system, one large and red, the other one small and blue. It's something that people don't happen to see often in the real life, so there was the old dilemma – create a realistic simulation or fake it a bit to make it more convincing for the viewer

"The big red star is actually composed of two CINEMA 4D volumetric lights with some noise added: one for the star body, the other one squashed and used for the plasma ring"

"I mostly enjoyed modelling the shuttle; it started as a separate sketch on a napkin, as I tried to design a cross between a bus and a space shuttle with some fancy anti-gravity engines"

"I decided to add the steam outlets in order to make the shuttle more dynamic and to achieve a more dramatic result. The steam was created by using a particle system and the Pyrocluster engine in CINEMA 4D"

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Part two

Part one on the disc

Step by step: Create a gas station diner

Tower Station and Drop-In Café 2009

> We'll continue building the set, modelling the interior of the building and a number of props that we'll use

Lance Hitchings graphics designer

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Software used in this piece

Maya Photoshop

On the Disc

TowerStation_pt1_final.mbj
Save yourself some modelling time by using the raw model, textures and objects

Step by step

Easy-to-follow guides take you from concept to the final render

Artist info

Lance Hitchings

3DArtistonline
Username: lhitch

Personal portfolio site www.hitchingsdesign.com
Country USA
Software used Maya, Photoshop
Expertise I excel at producing photorealistic images, particularly of hard-surface objects. Most of my projects are product illustrations

Last month we took up the challenge of re-creating a bit of Americana – an Art Deco service station from old U.S. Route 66. We blocked out the scene, set up the basic lighting and constructed the building, the terrain, the petrol pumps and a number of miscellaneous objects sitting around the scene.

This month we'll continue building the set, modelling the interior of the building and a number of props that we'll use in the interior. We'll also model some signage for the exterior and refine the terrain. Then it's on to texturing, and we'll build shader networks for the entire scene. We'll tweak both the lighting and the composition. Finally, we'll pull the final renders and composite them into the final image. So let's get started.

> Last month we took up the challenge of re-creating an Art Deco service station from old U.S. Route 66

Model, terrain maps and lighting

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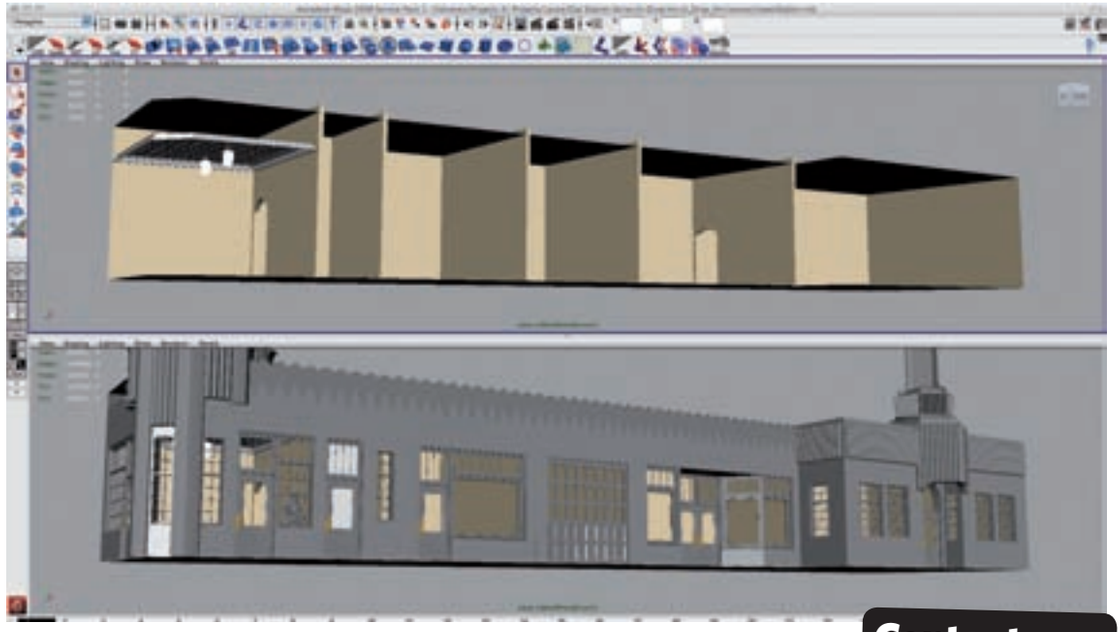
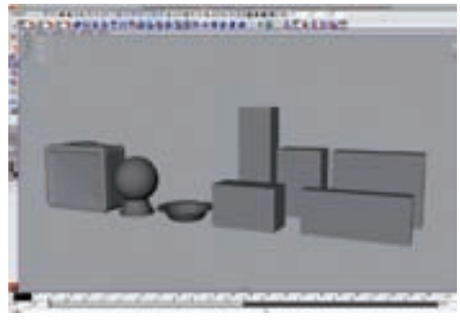
Final modelling

Interior and signage



01 The tower station has about six interior spaces, all of which are fronted by large windows. So I really needed to address the interior spaces, otherwise it would look like a vacant warehouse through those windows. The first step was to build walls that matched the best information I had regarding the interior. The only space whose ceiling could be seen was the main office at the near end. I repurposed the ceiling and fixtures that I built for the porches, adapting it to fit the office space.

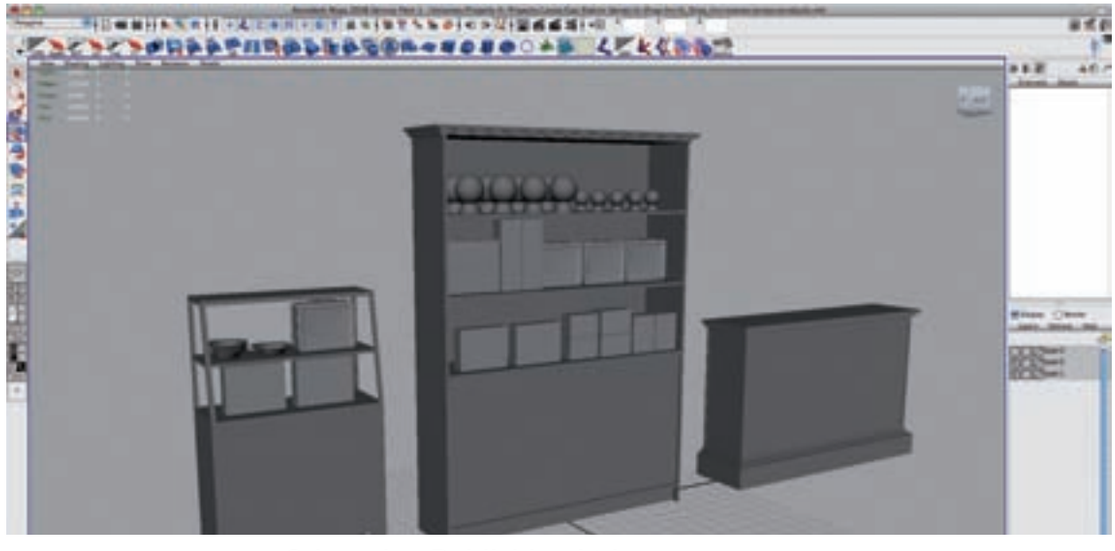
02 Next, I built a few simple display units, typical of the era. I reused these quite a bit throughout most of the spaces.



03 Displays need products, so I built a few items I thought you might see in a tourist shop, such as snow globes, ashtrays and lunchboxes. I also built a few generic boxes, using images of vintage box fronts for the proportions.

Contents

There are three different ways the interior of the station can be tackled. The first is to build some props and items as explained here. The second is to reuse existing props - though they need to fit the era that this is set in. You can also take modern props and give them retro colours or fonts. The final, and quickest option is to use a background image though then you may need to have the view from further away.



04 I then stocked the shelves of my displays with the various products that I had created. I imported these into the scene as grouped units and duplicated them, rearranging the products so that each one would look different to the next.

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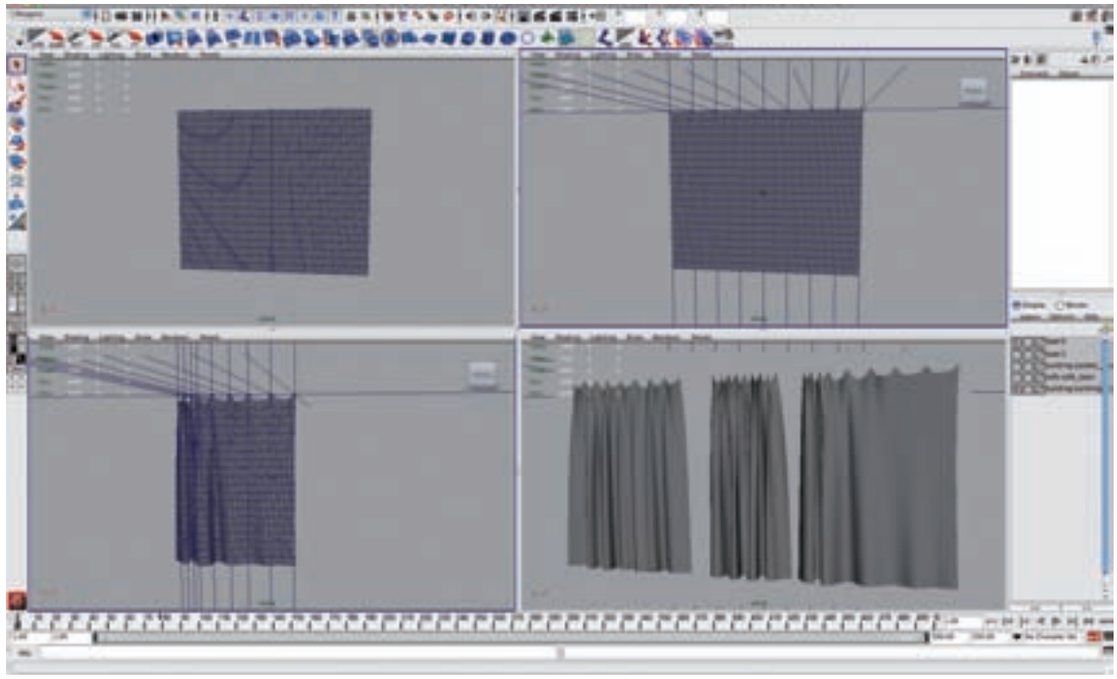
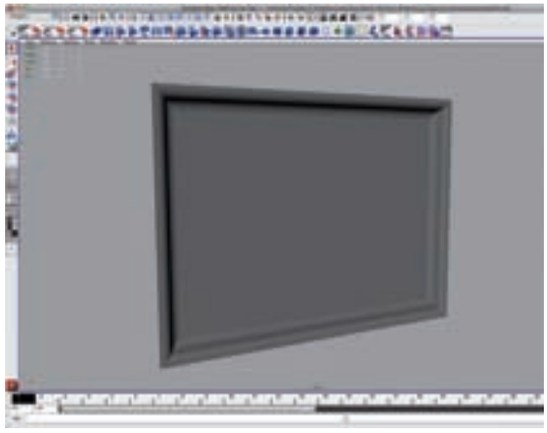
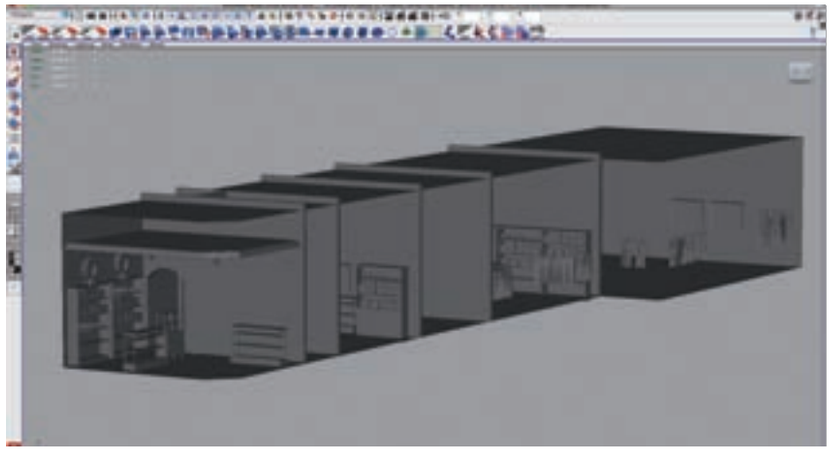


05 Cloth was used to create the curtains. I started with a single polygon plane with sufficient resolution to hold the details of the folds. I converted the plane to nCloth, then attached a constraint to every eighth vertex to simulate curtain rings. I then animated the constraints to close together. I ran the simulation and stopped it at a point where the curtain seemed to settle down. By duplicating the plane, I now had a curtain with the folds frozen in. For each curtain, I created a slightly different animation, duplicated the plane and applied a smooth operator on the mesh.

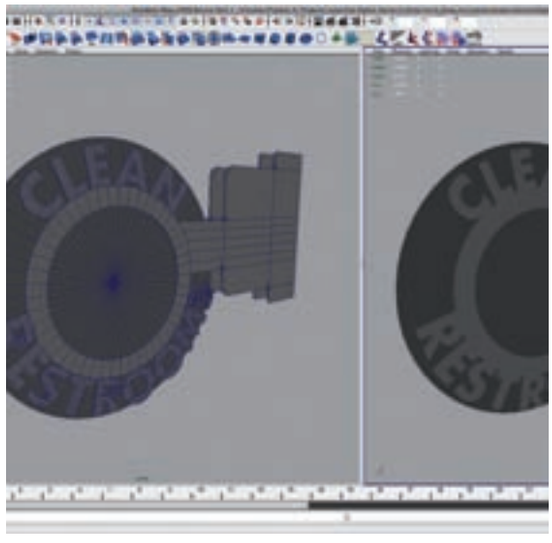


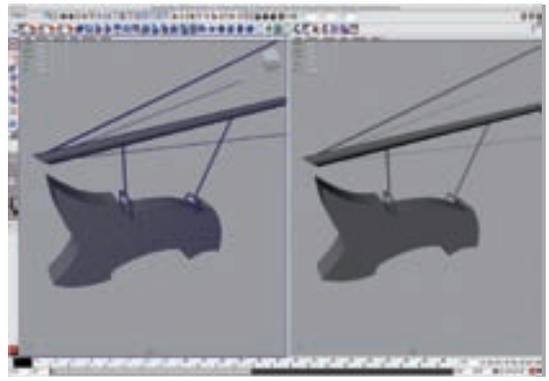
06 I wanted more on the walls than just the displays, so I created some planes with a frame around them. I eventually mapped different images of the *Dogs Playing Poker* series, as this seemed to fit the era.



07 Finally, I took the various displays, the framed pictures and the curtains, and populated the interior spaces with them. I also added a couple of the tire displays on top of the cabinets in the main office.

08 Because one of the interior spaces is devoted to a couple of toilets, I decided to add an exterior sign next to the door leading to them. Like everything else in the scene, this is based on a photograph I found of a vintage rest room sign.





09 The cafe also had a sign over the entrance, so an additional sign was created. I traced the sign from a photograph with a vector path in Adobe Illustrator, and then imported the path into Maya. I then used the Surfaces>Planar with Tessellation set to Polygons>General Fit to create a polygon plane, which was then extruded.

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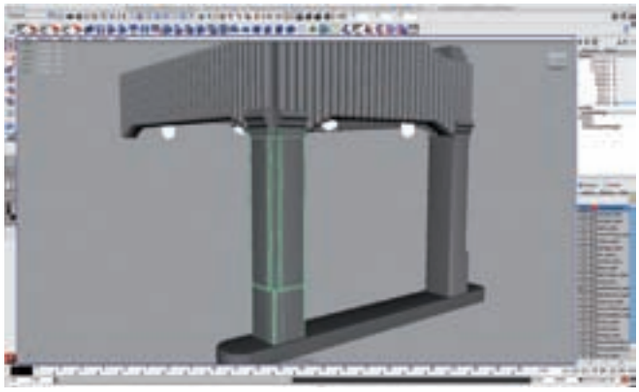
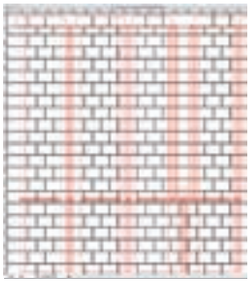
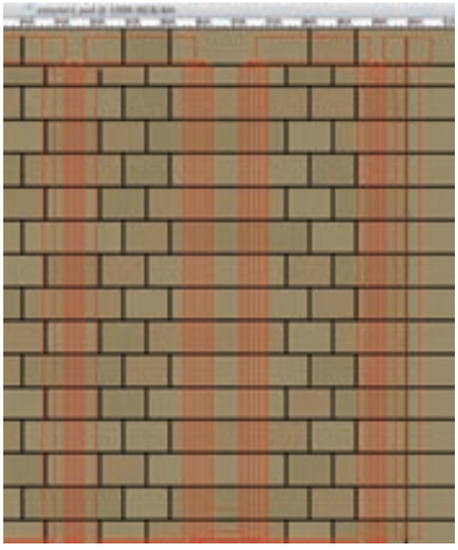
Texturing
Bricks and mortar

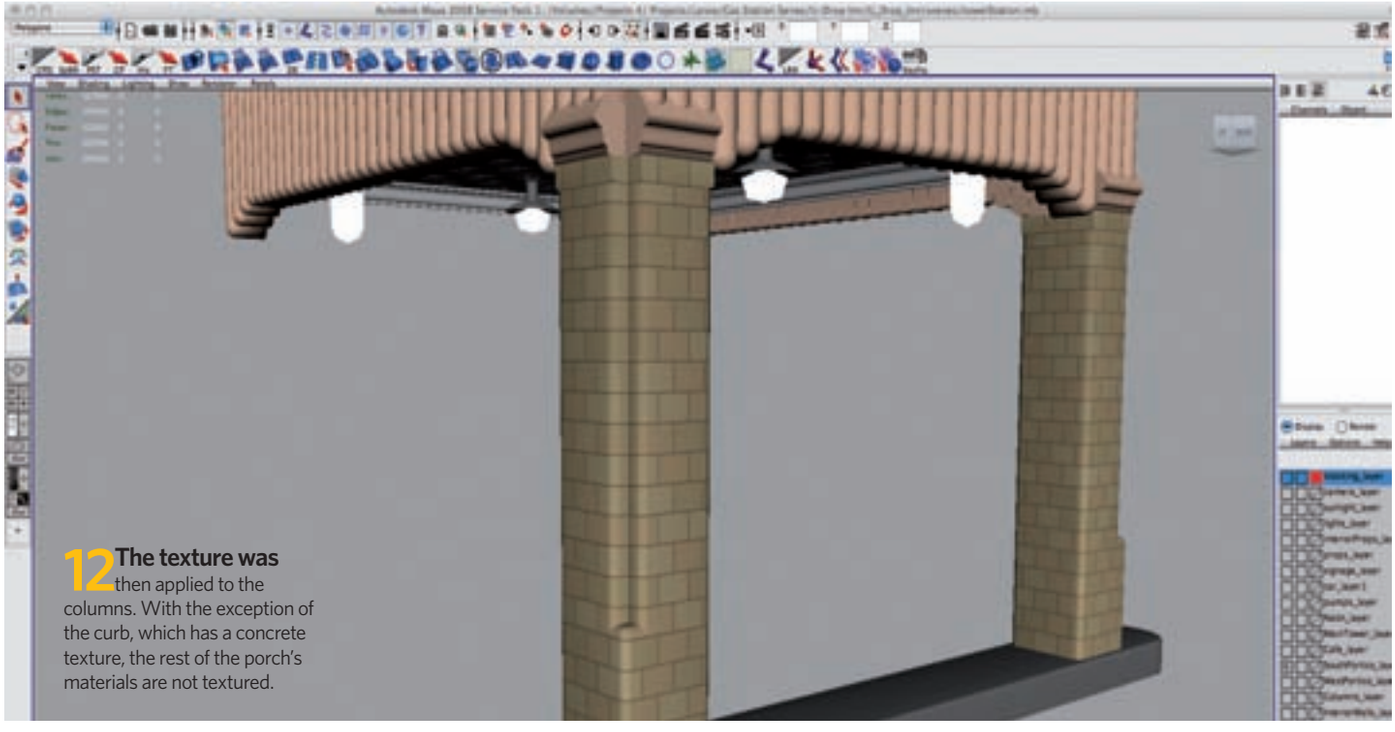


10 Like many of my projects, the materials were an even split between solid materials with no texture and materials that had some type of texture mapped to them. I kept the textures pretty simple, and all of the UV maps were created using either planar or cylindrical projections, so they were pretty simple as well. I started with the columns supporting the porches, which had a brick-like texture.



11 Using the UV map as a guide, I painted the textures for the columns in Photoshop. I noticed in all of the tower station photos that the bricks had a subtle variation in colour from brick to brick, so I painted the texture to replicate this. The Bump map only has the indented grout.

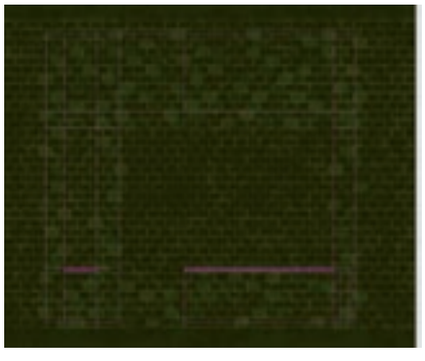




12 The texture was then applied to the columns. With the exception of the curb, which has a concrete texture, the rest of the porch's materials are not textured.

13 The building walls were built in seven panels, and each panel was UV mapped and textured separately. The window frames, doors, door handles and trim along the roof were all untextured materials.

14 The building walls were covered in green ceramic tiles. Like the bricks of the columns, there was a subtle variation in colour from tile to tile. The tile grout was light but dirty, so I added some grunge to the grout texture. Due to the tiles having a slightly wavy surface, I built this into the Bump map in addition to the grout.



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Details

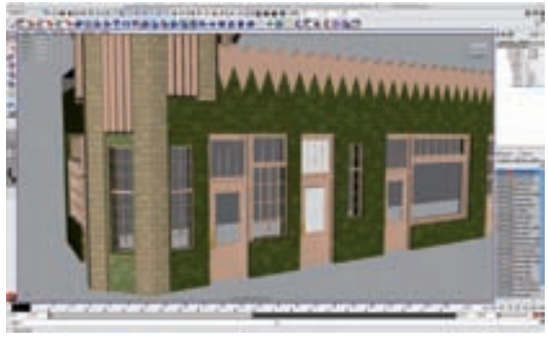
Signs of the times

15 I used a Blinn for the ceramic tiles because I like the blurred reflection's attribute better than the glossy attribute in mia_material_x. I set the Reflectivity value to 0.025 and set Reflection Blur in the mental ray section to 0.3 with eight reflection rays.

Materials vs texture maps

If you find yourself pressed for time then using the built in Maya materials can be quicker than creating texture maps and applying them to the surfaces correctly. There are some elements though that you can't take short cuts on, especially if you are going to use strong or direct lighting. Brickwork for example should use textures.

16 This is the building with all of the textures applied. As you can see, the columns supporting the tower use the same type of brick texture as the columns supporting the porches, but they were UV mapped and textured separately.



17 The petrol pumps are almost entirely mia_material_x materials with no textures mapped to them. The exceptions are the glass globe, the glass pane describing the petrol type (there's also a material that reads 'Regular'), the meter panel and the rotating cylinders with the numerical read-out.

18 I used three different textures for the lunchboxes to provide some variety. Since all of the generic boxes were built using the proportions from specific images of vintage boxes, mapping those images to the boxes was a breeze.

Going to the model store

Another time saving device for populating your 1950s Americana world is to buy in some props from websites such as Turbo Squid - www.turbosquid.com. This has everything from gas pumps and furniture to slot machines, microphones, furniture and period cars. These though are quite expensive to use so search for things like Google SketchUp models which are available for free, could pay dividends. Modifying modern models is also an option. Another site worth looking at is the 3D Studio at www.3dstudio.com which has a seamless neon background, perfect for the 50s diner.

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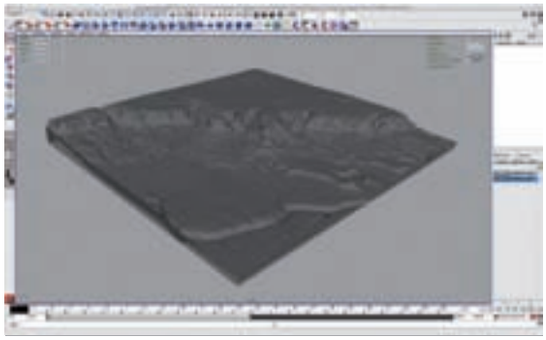
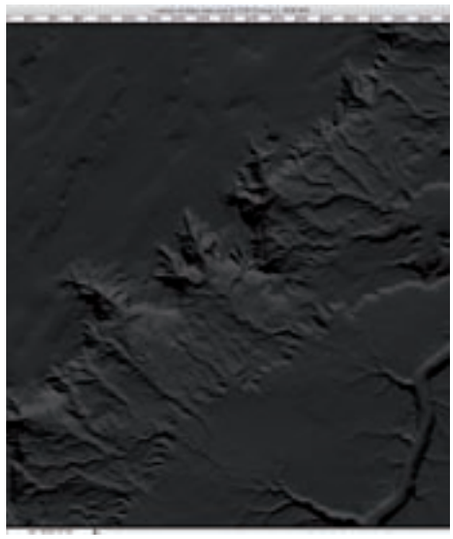
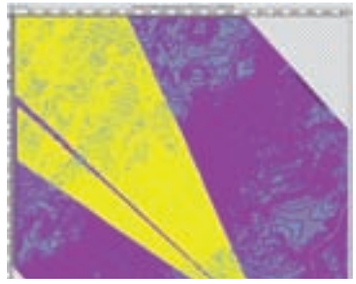
Texturing the terrain

Borrowing from reality



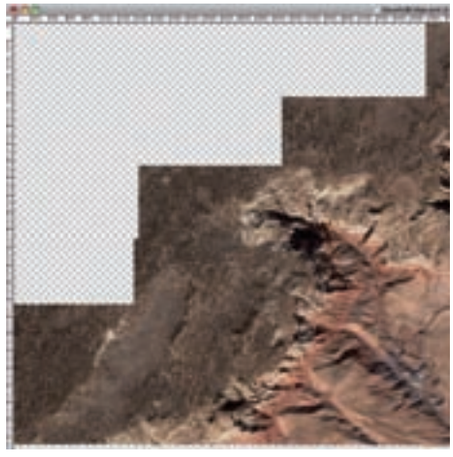
19 As the scene began to come together, I re-evaluated the background landscape and decided to go with a different locale: the Vermillion Cliffs, part of Arizona's Painted Desert. I created a mesh object of the terrain using the same technique I described in the first part of this tutorial. I kept the mesh object grouped with the original NURBS plane and used the mesh object to place and scale the terrain. It didn't contain enough detail, so I turned it off and used the displaced NURBS plane to render.





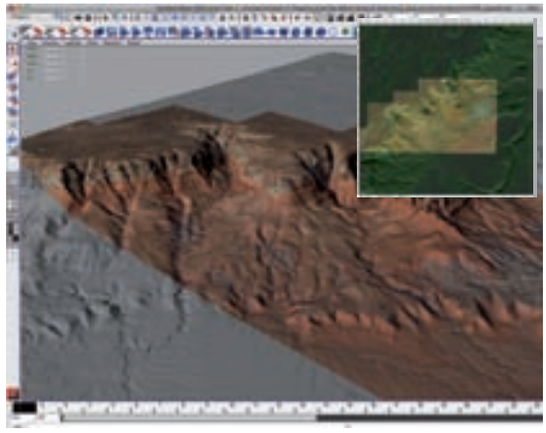
20 Next, I began with a 4,000 (the size of the texture map) render of the terrain using the Top camera. In the render camera, I set the selection mode to vertex component. In the viewport, I selected slightly more of the vertices than will be visible in the final render. Going back to the Top camera, I made a screen grab of that viewport. The yellow section shows the selected vertices.

21 I used the satellite imagery available on Google for the actual texture. Making sure that Labels (roads, streets, railways, rivers, etc) is turned off, I made screen grabs at a fairly high resolution. This was done so that the grabs will tile together with enough overlap to crop out the text and graphics in the image. I made enough screen grabs to cover the entire area that will be visible in the render cam.



22 I opened all the screen grabs and combined them into a single large image. This image covers an area of about 7 x 3.5km in high resolution.

23 The texture map needs to be registered with the UV map. I had already registered the screen grab of the selected vertices with the top-down render of the terrain to get a map of which terrain was going to need textures. I set up a directional light in the top-down render to give me shadows similar to those in the satellite imagery. I only textured the cliffs and the hills below, then registered the satellite imagery/top-down render to the 4,000 image file of the UV map of the terrain in green.



24 Here's the final texture map applied to the terrain mesh object (it also gets mapped to the displacement NURBS plane). You can really see the stratified mineral layers that give the desert its name in the sides of the cliffs.

Optimising your textures

Optimise the texture maps inside Maya by converting them to .map format. Open the preferences for Maya and hit Rendering. Check the Use optimized textures (auto-conversion) box. Select Custom Location and choose a directory for all your new texture maps. I used Assigned textures only, rather than converting all textures. Click on the Update optimized cache textures now button and Maya will convert every texture in the scene into the .map format, creating new files and placing them in the directory you chose. This is particularly important if you used JPEGs for textures, since mental ray hates compressed textures.

You will then need to go in and relink all of the connections to the texture maps for every material by hand. Select the file node, click on the Link button by the file name in the Attribute Editor, go to the directory and choose the appropriate .map texture. It'll have the same name as the original texture file, but with a .map suffix.

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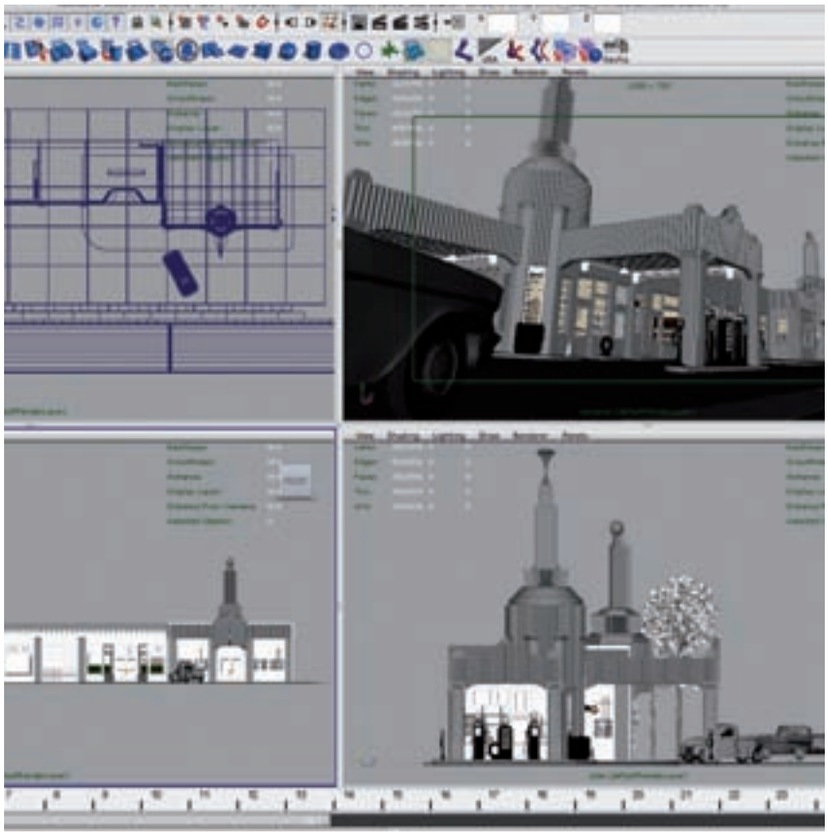
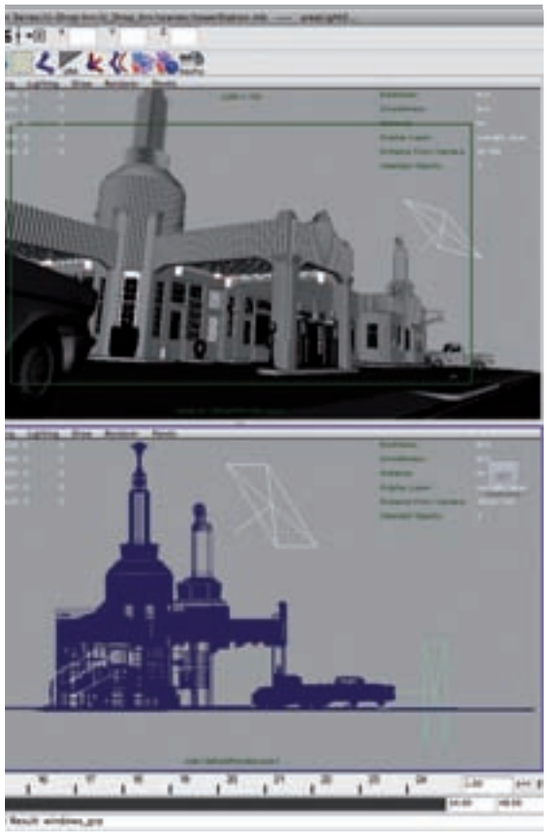
Final composition

Adjusting the angles and the lighting

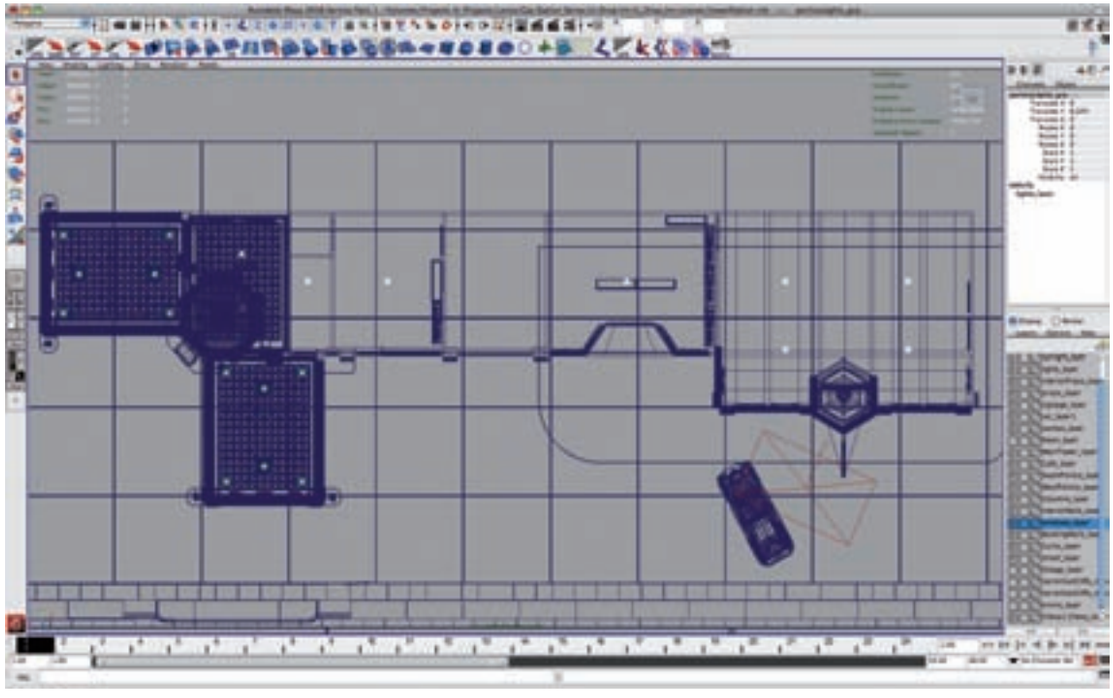




25 **With the modelling** and the texturing finished, the next step is to tweak the final composition and lighting. This is the composition I decided to use. I rotated the camera 5.3 degrees on the z-axis to create a bit of tension. Placing a car in the foreground frames the image a bit and provides better balance between the foreground and the background.

26 **Test renders showed** that the cafe tower and the side of the truck were too dark, so I added a couple of Area lights and linked each to the trouble spots. That's really all I needed for the exterior, as everything else is sun and sky.

27 **Although it was** getting a bit dark under the porches, there are six lamps under each. So I place a Point light in each lamp and that fixed that issue. I placed two lamps (with Point lights) in the office, four Point lights in the cafe and one Point light in each of the additional interior spaces.



Timesaving tips

There are over 160 texture maps applied to materials in this scene. This is a lot of information for mental ray to process, which is why you ought to optimise your texture maps.

Texturing the terrain is both difficult and tedious. Only texture those portions of the terrain that will be visible in the final render though bear in mind that you might want to create alternative renders from different viewpoints.

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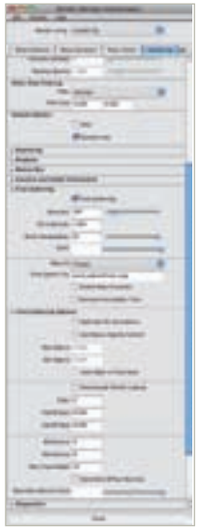
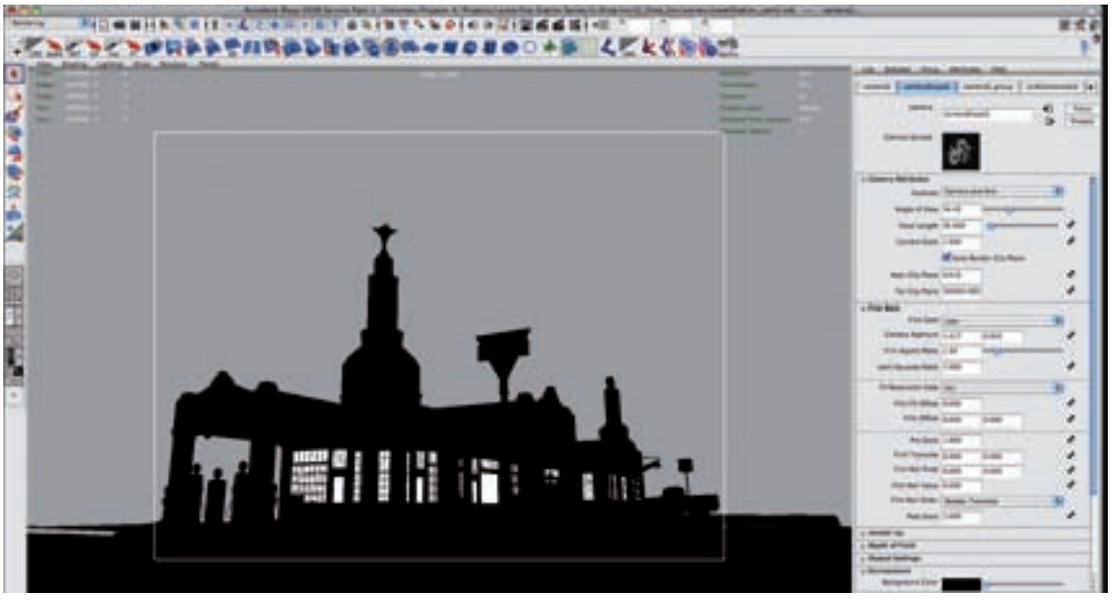
Render

Finishing off and Photoshop manipulation



28 I set up four primary renders, not including additional mask renders. I rendered the primary scene, the foliage in the background and the cliffs in the far background as three separate renders for more control in the compositing stage. I also set up an Ambient Occlusion pass in the render layers.



29 During compositing, I often need an alpha mask that shows an object as it's occluded by other objects. For example, the glass in the windows, as they're occluded by the building walls, the window frames, the car, columns, petrol pumps and other objects. To quickly crank out these renders, I set the environment of the render camera to black. I selected everything in the scene and applied a black surface shader. Then I selected the objects that I wanted to mask out, in this case all the window glass in the scene, and I applied a white surface shader to them. I did the render in Maya's software renderer, which is very quick. Even though the render is 3,000 pixels wide, it only took 27 seconds. This mask then let me perfectly select the windows for manipulation in the composite.

30 Virtually no render comes out of Maya that doesn't need manipulation in Photoshop. Each render here required adjustments to contrast and saturation. I used a stock image for the sky, and added a haze layer to the cliffs to give them atmospheric perspective. You'll see how the extra alpha masks I rendered for the windows and the truck were utilised. The AO layer (set to Multiply) adds more realism to the ambient shadows and the vignette layer subtly frames the image. When multiplying a B&W layer over a colour layer, the shadows go very grey instead of a darker version of the colour. To resolve this, I used an additional colour layer connected to the AO and the vignette layers. There will be more about this next issue.

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The insider's guide to unlocking the potential of the iPhone
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essential hints and tips inside

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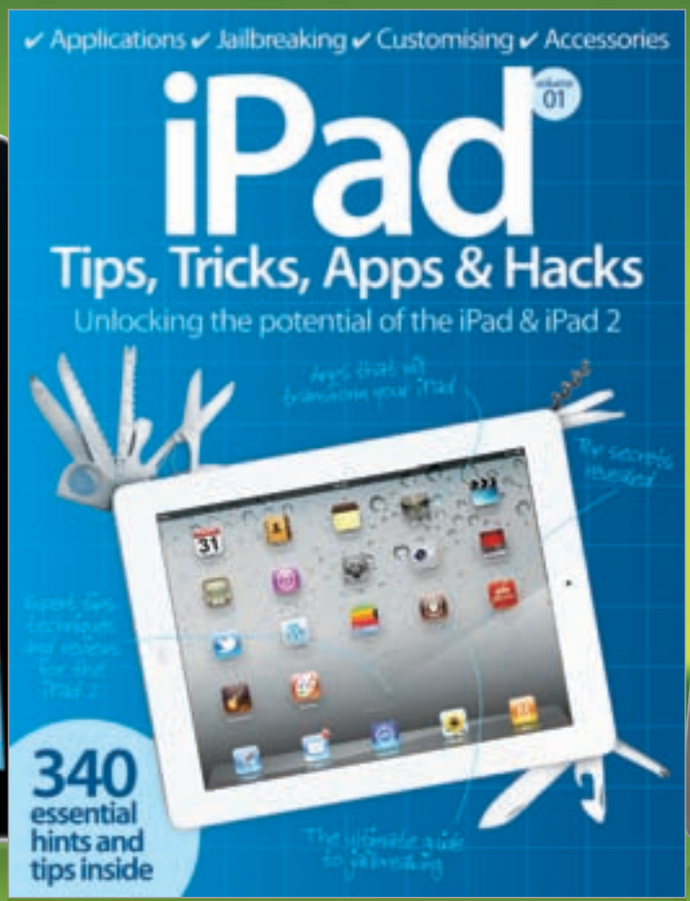

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Create a

Ride 2009

Discover how to create a futuristic vehicle with hard-surface textures and materials in 3ds Max

Gustavo Groppo is a 3D artist currently working at Vetor Zero/Lobo in São Paulo, Brazil

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futuristic vehicle

Modelling, texturing, rendering

Software used in this piece

3ds Max | V-Ray | Photoshop | Illustrator

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behind the scenes

3D artists explain the techniques behind their amazing artwork

Artist info

Gustavo Groppo

Personal portfolio site http://gu.cgsociety.org/gallery/

Country Brazil

Software used 3ds Max, V-Ray, Photoshop and Illustrator

Expertise Although I work across many areas, I am more focused on shading, texturing, lighting and rendering. I also have a good understanding of inorganic polygonal modelling

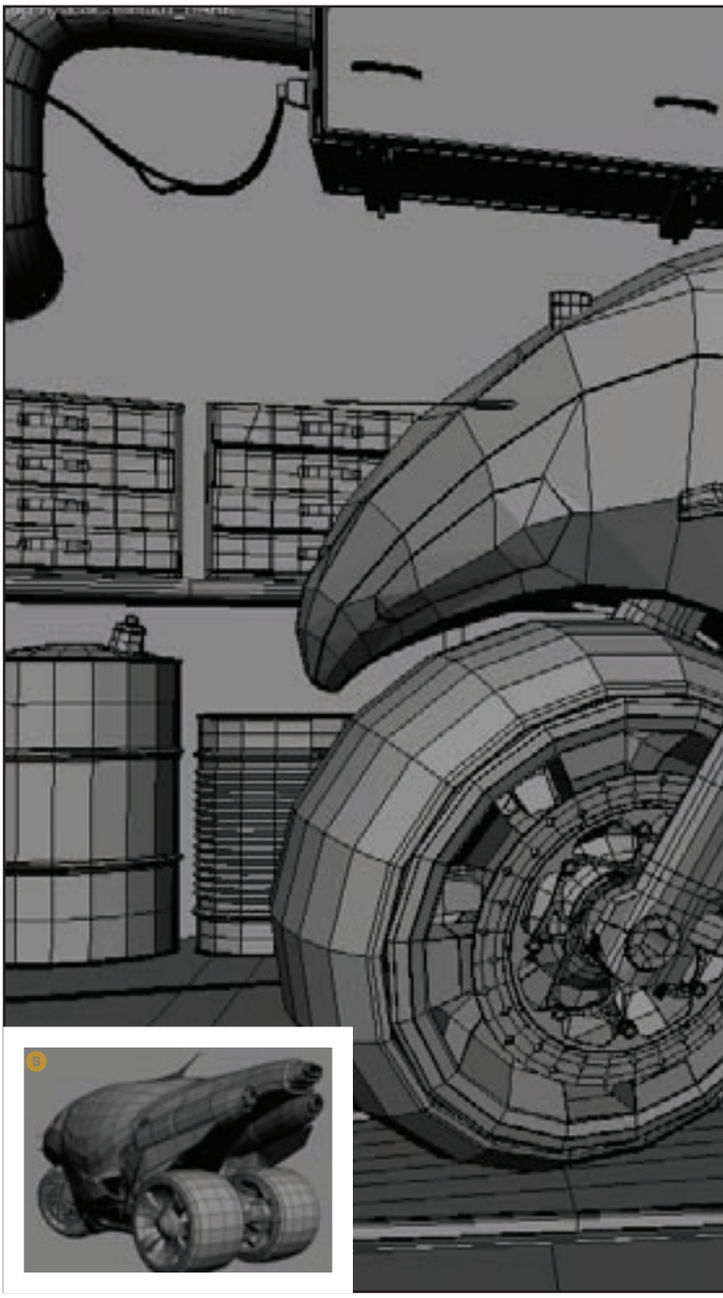
This tutorial is a brief explanation of how and why I produced my image *Ride*. This was my very first vehicle design, and the intention behind it was just to come up with a design and visualise it, but it went further than that and a whole situation was created for the vehicle.

As well as the concept definition, the lighting and rendering proved the biggest obstacles to achieve the end result. More attention is devoted to these areas in this tutorial in order to understand them better, while the walkthrough will also show how the texturing and shading choices combined with indoor lighting have helped to create a convincing sunset. You will also be able to see how each piece of software was set up, including the settings required for materials, lighting sets, render options and post-production techniques. This image was created with 3ds Max, the V-Ray render engine and Photoshop for the textures and post-production techniques.

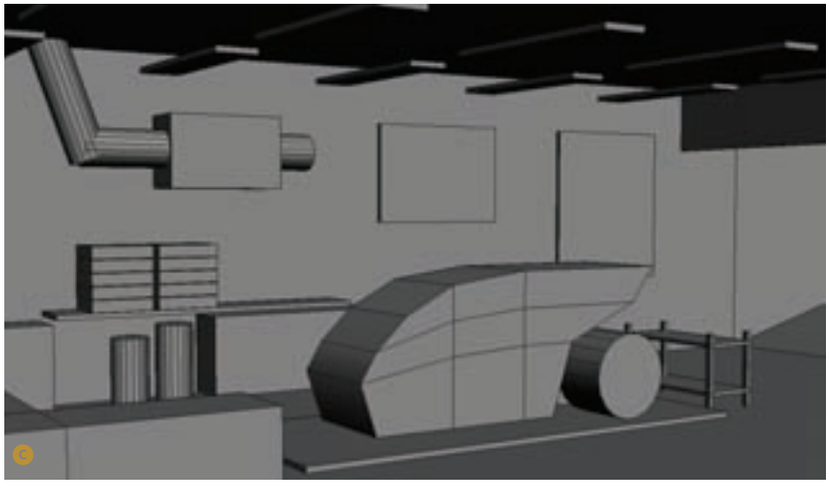
01 Inspiration

I have always been a fan of motoring and motorcycling. I like to see bikes with different designs of bodywork and Formula One cars with aerodynamic forms. Wings, aerofoils, sensors and antennas have always caught my attention, and these were factors that inspired me in the design of my model. Much of my inspiration also came from the work of Daniel Simon, Syd Mead and, incredible as it may seem, the cyborgs of Hajime Sorayama. Even with all these sources of inspiration A, I also prepared an extensive gallery of images of all the types of bike that I found interesting and thought might help with something in my work.

A These are a few of the many references that I used to create my vehicle



B



C

02 Creating the concept

Unlike the natural course of a project, I did not make a draft of my ideas. I skipped this stage and went straight to the model B with only the concept in mind. My idea was to create a robust vehicle with three wheels, abnormal proportions and a closed cockpit, guided through cameras. My concept was something futuristic but a near-future, more in line with what we are used to see. A date that seems far off, but within our lifetime – say, around the year 2030, no later than that.

B Some very basic objects that were played with to define the scenery, camera angle and what kind of objects would appear

D This is the work that went into creating one of the wheels

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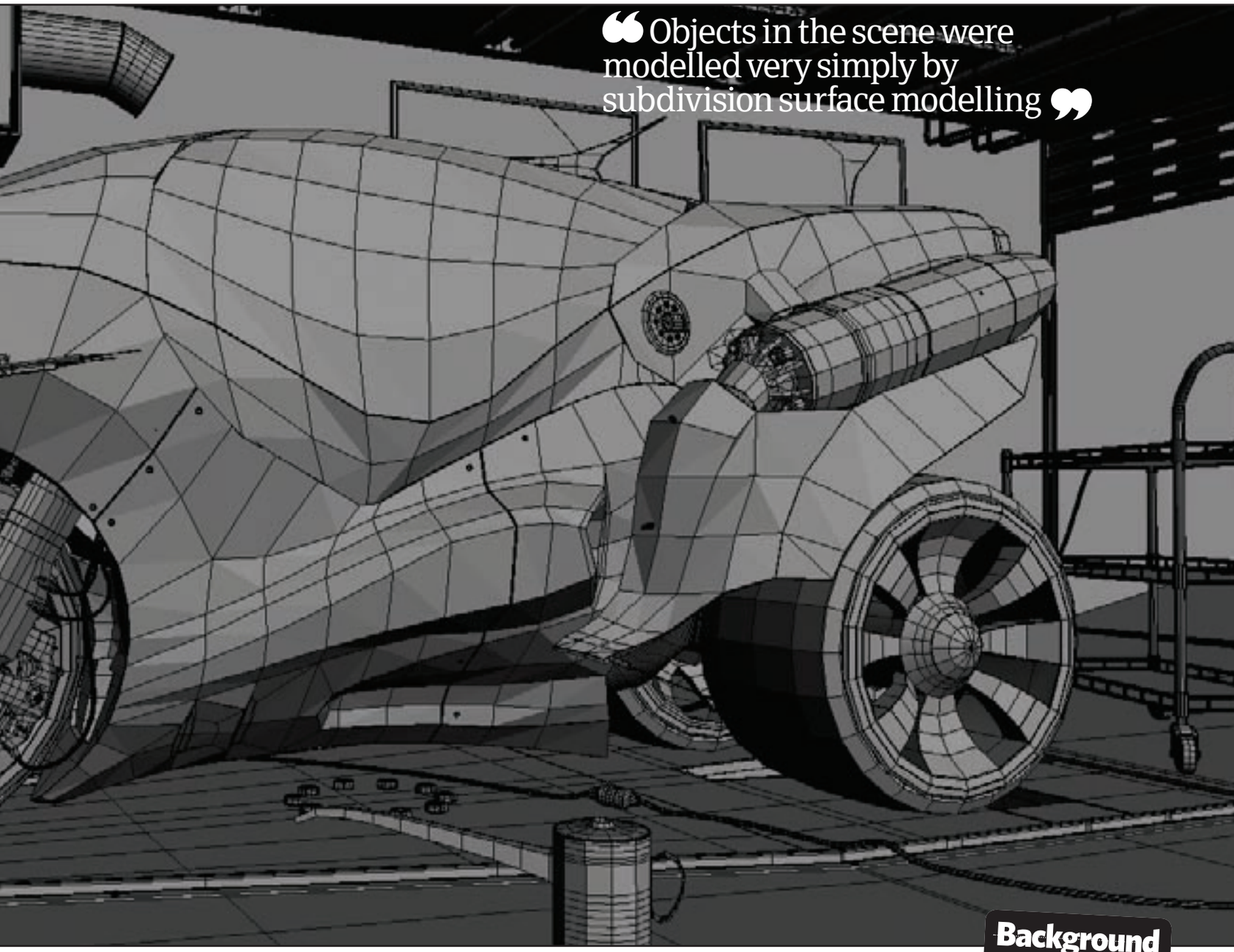


03 3D scene roughing

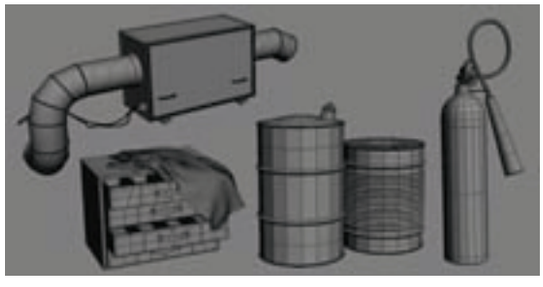
So that I have some sort of an idea of what will appear in the scene, I usually try out some compositions with fairly basic objects C. This helps me think in terms of the volumes, proportions and frameworks within the scene, which is useful because it forces me to think of a good design solution as a workaround.

04 Modelling the vehicle

Poly modelling formed both the bodywork and the intricate pieces of the vehicle. The hardest part of this process was modelling the low polygon while thinking about the result with the smoothed mesh, and build loops and quads to eliminate any irregularities in the surfaces, curves and joints of the bodywork. To be honest, the best way to model a vehicle would be using NURBS, where the surfaces are built from mathematical curves, resulting in accurate shapes D.

05 The props

As well as the vehicle, other objects in the scene were modelled very simply by subdivision surface modelling. Objects closer to the camera are more detailed than those in the distance, which is significant in the optimisation of the memory and processing so that the handling of the scene and render can run well.



Background

The background wall of the image features an extractor vent and a couple of picture frames. As these are furthest from the camera they aren't particularly detailed. The wall is slightly out of focus because of the depth-of-field effect but if you wanted a shortcut to lower the memory overhead and rendering time, then the entire wall could be a single image texture. You need to work out the viewing angle for the scene before implementing it though because otherwise the perspective won't look right

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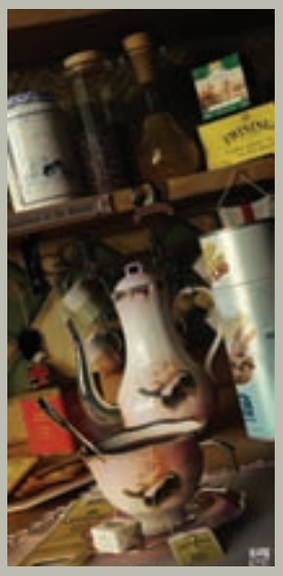
Artist Showcase

Gustavo Groppo

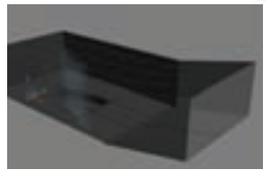
Starting in 2003, I specialise in shading, texturing, lighting and rendering for inorganic models.

***The Audience Will Listen 1990*, 3ds Max, V-Ray and Photoshop (2007)**
This work shows a reproduction of the guitar used by Steve Vai in 1990. I like this one because of the camera angle that puts all the details in focus



***5:00*, 3ds Max, V-Ray and Photoshop (2007)**
Here, my goal was to create an English tea time, compromising of foods, kitchen objects and English artifacts. This is my favourite personal work

***Maasai*, ZBrush and Photoshop (2007)**
This is my first attempt to sculpt in ZBrush. The figure is a man of the Kenyan Maasai tribe



E Overview of the garage model with the opening for the sunlight

> It is amazing how V-Ray's Physical Camera can share the same properties of a real-world camera

F The yellow VRay Lights and the sunbeam entering the garage. Also, the setup for VRay Sun. Turbidity controls the pollution and Ozone the clarity of the sky

06 Modelling the garage

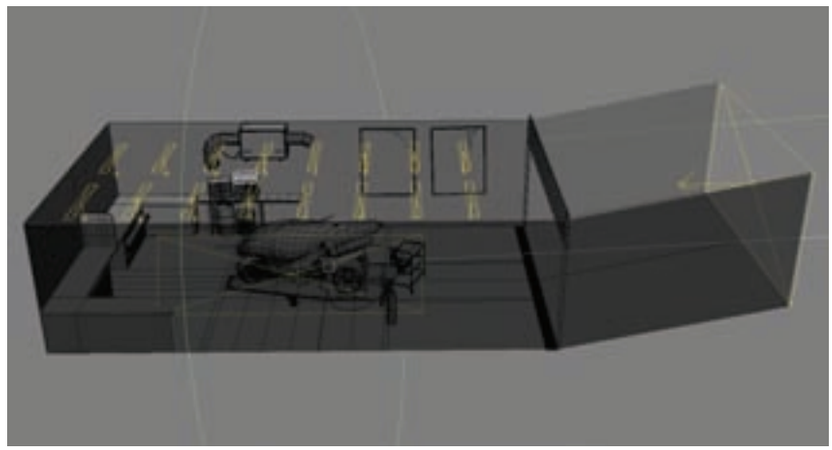
The model of the garage's environment is a simple cube E, which I later split each face to map different textures.

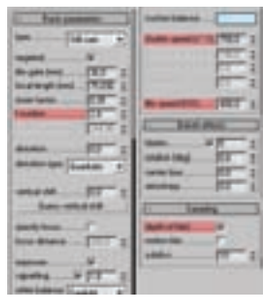
07 Lighting setup

The lighting setup for this composition consists of indoor lighting together with one outdoor set, VRay Lights and VRay Sun respectively. The light entering the garage from the sunset outside was stimulated to get hard shadows and highlights in some areas F. A great aspect of VRay Sun is that you can play with the Turbidity and Ozone controls to give the scene more of either a polluted or clear look. The indoor VRay Light simulates cold lamps casting soft shadows, and its multiplier is measured in watts as V-Ray works in real-world units.

08 Physical Camera

It is amazing how V-Ray's Physical Camera can share the same properties of a real-world camera, where you are able to control elements such as ISO levels, shutter speed and a depth of field that depends on the f-number. VRay Sun and VRay Lights work accurately with this G. In this picture, the camera was controlled to avoid sunlight bursting onto the environment, carefully monitoring the settings for the depth-of-field intensity.





G The camera controls. The red boxes show the main settings used on this work

09 UVs and UVWs

Before opening the UVs I analysed the scene in general, which defines the objects that really need to go through this process. In objects that are distant in the scene or lose information due to blur and other factors, I usually apply a simple mapping with low textures H. On this composition, I unwrapped the UV of a few objects, such as vehicle parts, tires and scratched metal objects, which needed a more precise mapping.

10 Shading basics

The basic shaders in this work are all unique to V-Ray, called VRay PowerShader. The materials are physical and easy to set up, while it has accurate calculations of blurred reflections and refractions I. In particular I always use this shader provided in layers. This can be done using VRay BlendMaterial, defining a base material and many other coats. An example of this is on the vehicle's body. I've set a base metal material, composed in the first two layers. The logos, writings and other metal parts of the bodywork are

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independent materials that are arranged in different layers, separated by masks and different map channels. This allows for great mobility in the creation of different materials in a single object.

11 Texturing for print

The texturing of a scene for printing requires some planning. It requires large bitmap resolutions, but not the entire scene should have giant maps. That depends on factors like the distance of the object from the camera, how this object is in focus and the clarity of information it will have, in the case of scenes with depth of field. In this work, as I chose to render at 6,000 pixels wide, I had some maps with resolutions of 5,000 and some at a little less, ready to use with tiling as the walls and floors J.

One practice that improves the quality of textures in the rendering is turning off any bitmap filters, because all the pixel information remains intact.

J The textures for the walls and floor with their shaders. A red square highlights the bitmap filter configuration, checked as none

12 Rendering the big image

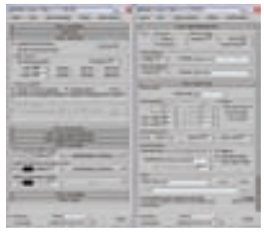
Although I opted to render at a high resolution, as it is likely to cause problems with memory I decided to make it in a single pass and generate masks to separate objects for use in post-production. The rendering time was 20 hours, which is relatively normal for a resolution of 6,000 pixels wide and also with the amount of information of indirect lighting in the scene. One feature that helped me a lot to avoid problems with memory and hardware was the VFB (VRay Frame Buffer). It had the option to save the image directly to the hard disk as a VRIMG file (VRay Raw Image File) K. So even if the rendering stopped due to any unforeseen problems, I would not have lost all my work.

13 Post-production colour correction

The process of colour correction was relatively simple as I just cooled the tone of the picture as a whole, which was brought in from 3D with warmer tones than I expected for the lighting of the sun. Also, I added layers of curves to lighten or darken some parts of the image and added a blue colour layer to get a pleasant tone.

Lighting and rendering

I lit my scene using three types of lights: Internal, which are all VRay Lights; VRay Sun, which simulates the evening light entering through the opening of the garage (remember that by creating a sun, we automatically created an external environment that will affect the configuration of this system, which is VRay Sky. Any change in the position of the sun makes the colour and intensity of environment change); VRay Sky is set in the Environment Settings as Global Illumination. The light from the sun let me create strong points of light, contrasting the whole scenery a bit more and creating more of a dramatic mood. I used the VRay GI engine to render the scene. It is very easy to set up and gives an accurate light bouncing among the objects. Due to that, I did not need to improve the contrasts with Ambient Occlusion.



K These are the render settings. Note the VFB tab, where the render was configured to save the image on the disk to avoid memory crashes

14 After addition of textures

Continuing in post-production, I added textures on some of the objects that were very clean compared to the rest of the image. The areas that needed more work included the floor, which needed some pieces of rough concrete added, the can of oil, to which rust was added, the walls of the garage that were dirty in some parts and the bodywork of the vehicle, to which I added some leaked dirt. All of this benefited the work immensely.

This before-and-after image shows the colour-corrected render and the final image with textures added in Photoshop

H The unwrapped mesh for the vehicle bodywork with checker applied to view possible distortions

I An example of the VRay BlendMaterial for the vehicle bodywork. Note the several layers that compose this shader

20 hours
Render time
Resolution:
6000 x 3342

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I made this...

Incredible 3D artists take us behind their artwork

Artist info

Cesar Martinez Alvaro

3DArtistonline

Username: Kaesar3D

Personal portfolio site
http://kaesar30.cgsociety.org/gallery/

Country Spain

Software used 3ds Max, Photoshop, Combustion

For lighting, I used one Direct light with Area Shadows to simulate the light of the moon. I also generated a Dome Light (70 Spot lights with a Shadow Map creating a hemisphere) to simulate a skylight. Additionally, in the scene I used Omni lights with a Shadow Map for the streetlights and Omni lights to simulate light points in some elements of the scene.

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Register with us today at
3DArtistonline.com
www.3dartistonline.com
to view the art and chat to the artist

Software used in this piece

3ds Max | Combustion | Photoshop

All modelling work was done in 3ds Max; Edit Poly was used to create the models. I always begin with standard primitive objects, a plane, a box and a cylinder or a sphere. The final scene is based partly on the references and partly my own composition.

> For rendering, I used a Default Scanline Renderer in 3ds Max. There, I used the Catmull-Rom filter and activated Enable Global Supersampler, keeping the rest of the parameters as default

The final image was calculated in one pass, while the result of the render is very good and the first aspect of the image is very positive. I only used Combustion for post-production, adding some adjustments to the final image. I used the Discreet Color Corrector filter to adjust saturation, contrast and levels. I also used Balance, Brightness/Contrast and the Color Shift filter to adjust the image's colour and brightness, while I used the Glow filter to adjust the image's luminance.

Church of the Calatravas
2008

The title of my work is *Church of the Calatravas*. This is an image based on La Gran Via, one of the most famous streets of Madrid. I like the classical buildings and the architecture in the centre of Madrid; it is the perfect city to re-create a 3D image. Personally, I enjoy creating 3D environments and so far haven't made an image that's not based on a real environment.

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Step by step: Model and texture a horse race

Race to win 2009

Step by step

Easy-to-follow guides take you from concept to the final render

Artist info

Rubén Darío Karamañites Arango

3DArtistonline
Username: Ruben Drakkar

Personal portfolio site http://rubendrakkar.cgsociety.org/gallery/

Country Panama

Software used 3ds Max, Photoshop, Mudbox, ZBrush, mental ray, Illustrator

Expertise Character development and concept art, making different environments for films and games

Modelling, textures, rendering, post-prod

Humans and horses have complex albeit different muscle systems. To aim for a realistic work of art, each individual vein or wrinkle needs to have its place.

This image requires strong skills and confidence in your own ability to get a realistic-looking final piece. The most difficult part was to model the riders and horses, then make them interact naturally.

Paying this much attention to specific areas meant playing to the strengths of multiple programs during the creation of the piece. Realism is maintained through the precision of the models, so drawing from references is an important skill to master. If you have many reference images to start with, then this will help.

This tutorial is the result of an enormous amount of hours consisting of dedication and determination.

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Software used in this piece

Photoshop · mental ray · Illustrator

> The horses' physical movement was a challenge because all the muscles needed to be accurate

Rubén Darío Karamañites Arango is part of a small, local group of freelancers working in the advertising industry

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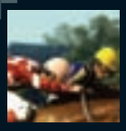
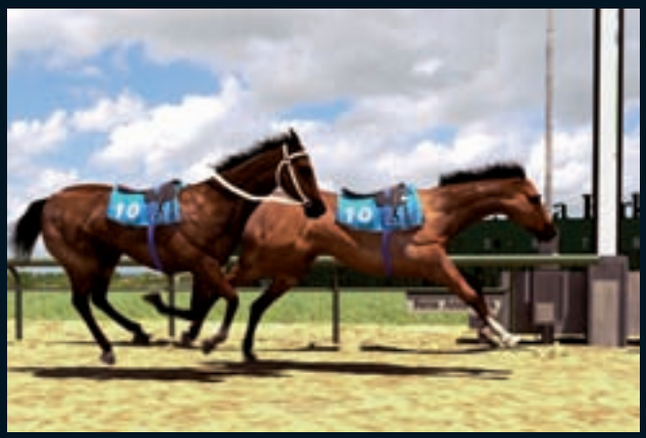


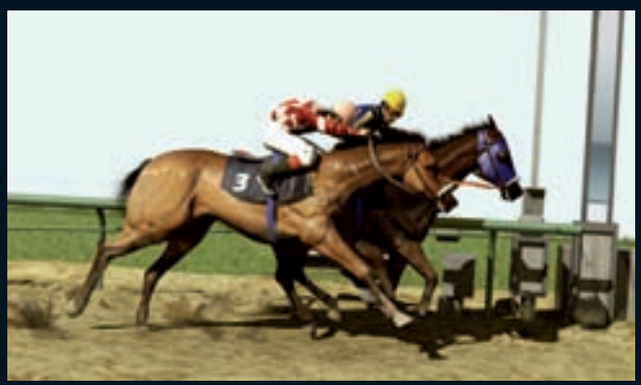
Concepts

Rough ideas

01 The main character was based on the retired jockey Laffit Pincay Jr, so I started by modelling and texturing him using photographic references from horse racing magazines. It is very important at this point that the horses' proportions and the scale of the environment must be properly adjusted to the general scene.

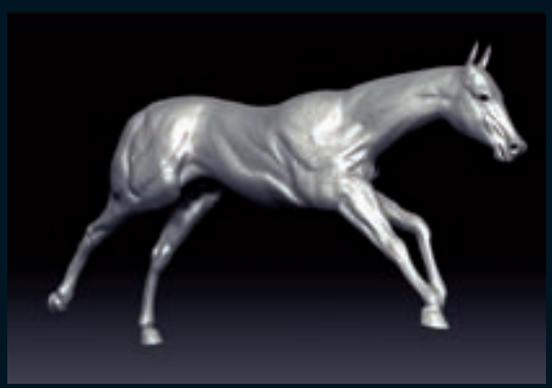


02 The horses' physical movements were a challenge because all the muscle and bone structures needed to be placed correctly in order to create the illusion of running. Different camera angles were used to focus the viewer's attention on the artwork.



03 The interaction between the jockeys and horses was vital to this piece, as were the expressions, because it all represents drama and adds an emotional edge to the image. Paying attention to these details helps at the rigging stage, as well as for the characters' setup. It's important to find new ways to develop the working process, as it will tighten up the technical and conceptual sides for future projects.

04 Sifting through various references, it became apparent that the jockeys share a unique characteristic: the colours they wear. The colourful combinations and mixes of fabric represent the paddocks that the horse comes from. Modelling the type of gear they use to race in is an amazing process, albeit a challenge to make them 100 per cent natural.



05 The complex structure of a horse forced me to make my research wide and varied. The positioning of the legs, head and main bodies were key in getting the proper effect of the horses running towards the finishing post. I also noticed that their motion was similar to that of athletes, so with this knowledge I used certain motions that show strength and force.

06 Equipment is important to the scene but there's not that much on horses, apart from a saddle, reins and wrist protectors. Working on the specular highlights of the horses' skin was a delicate task, as it depends on the millions of tiny hairs that reflect the sun's light. This creates a velvet effect.

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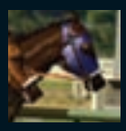

Starting to fine-tune

More modelling and a bit of sculpting

20 minutes
Render time
Resolution:
3000 x 1646

07 **One issue that** emerged was the unique specifications and limited references for the racing tracks, especially when I was attempting to find the proper angles for the characters and the right environment for compositional purposes. Eventually, I selected Santa Anita Park for my track, as Laffit Pincay Jr won seven times in a row there on 14 March 1987.

08 **The shading process** requires a lot of concentration, as it's demanding to calculate the different properties on the objects' surfaces. A considerable amount of rendering previews alongside reference images help to compare real-life photography with the work in progress.

09 **Various photographs from** horse racing were used as reference guides for selecting the lighting. Over 100 pictures of the majestic equine racers were downloaded for this purpose, which meant the process of picking one took days! One lighting environment stood out from the pack, which was that of a sunny day.

10 **Sunny days are** very easy to represent, as it is simple to tell what angle the main light source is coming from. The shadows in the reference images helped to accurately position the sun in the composition. On cloudy days there are only soft shadows, so it is extremely difficult to locate the sun in an image.

Lighting

Horse races are competed outdoors, so the atmosphere of the event changes in line with the weather. I put a background image on 3ds Max's viewport and attempted to light it. To help, there were plenty of reference images of races with various weather conditions and angles of the sun. The main aim of the lighting was to enhance the jockeys' positions, clothes and expressions, as well as the horses' muscular structures while running.

11 **After the rendering** was completed, it then took a while to choose the proper sky and background for use in the matte painting. The sky was painted with an indirect illumination, using a blueish, soft desaturated cyan for realism. The sourced images have the correct direction of the sun, which significantly aids a greater integration.

12 **Now it's time** for the final retouches. Dust was introduced to the track, enhanced by motion blur, haze and mud particles. These elements help to integrate the CG artwork with the matte painting behind it, which lends more realism to the composition. The sun has a yellowish colour, according with the matte's light tones.

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Automotive
Lance Hitchings
www.hitchingsdesign.com

Lance is a guru on all things Maya-related. In this issue he tackles the tricky problem of creating realistic indirect lighting through using an Ambient Occlusion render pass

Game design
John Hayes
http://zugok.cgsociety.org/gallery/

John works on characters for games at Sega in California, so there's not much he doesn't know about detailing low-poly models. Here he explains how to add colour variation in skin tones

Using Ambient Occlusion to create realistic indirect lighting

"Can you explain how to set up an Ambient Occlusion render pass and how to composite it into a final image?"

David Wright Los Angeles, California, USA

Including an Ambient Occlusion render pass in your image composite can go a long way towards creating realistic indirect lighting, as well as bringing out the fine detail in your image. It does this by shooting out rays to a set distance. Each ray either hits another object and is occluded, or it doesn't encounter another object and isn't occluded. It then calculates the ambient light for that point by comparing the ratio of occluded rays to those that aren't.

01 Set up an Ambient Occlusion render pass

In the Layer Editor, select Render Layers. Select all the objects you want included in the AO render pass and click the New Layer button with the blue dot. This includes all the selected objects in the new layer. Right-click on the new layer, scroll down to Presets and select Occlusion. This assigns a new surface shader to all objects in the scene. A mib_amb_occlusion node is plugged into the Out Color slot of the surface shader Ⓐ.

02 Set the attributes

Samples sets how many rays are shot from each point. Lower numbers produce a grainy result, while higher numbers produce better quality.

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growing community at www.3dartistonline.com

Characters
Lee Davies
http://leemale.cgsociety.org/

Lee works as a graphics artist in Dublin and is an expert at creating funky figures. In his spare time he creates celebrity caricature pics and here he answers your character-based questions

Your guide
Duncan Evans
www.3dartistonline.com

Duncan is your first point of call if you're suffering from a 3D niggle. As editor of the magazine, he can arrange to have your problems sorted out by talented and professional artists

Share your woes

Send us your 3D glitches and we'll get them sorted. There are two methods to get in touch with our team of expert advisors...

Email the team directly with your problem
3dartist@imagine-publishing.co.uk

Post your worry on the Q&A section on our forum
www.3dartistonline.com/forum

A

B

C

D

E

Max Distance sets the range within which the calculations occur. If zero, the entire scene is sampled. If not zero, only the objects within that distance are considered. The fewer the number of objects sampled, the quicker the render. A smaller Max Distance results in a quicker render until you reach zero, which will be the longest render by far (the rays go out far enough to include all geometry) B.

Dark sets the darkest value in the render. The AO layer usually gets set to an Opacity of 50% or less during compositing, so I don't set Dark to black, I'll use a value of 25%. Higher values also seem to take less time to render.

03 Compositing

When compositing, I often use a couple of AO layers: one with a high Max Distance value for overall lighting, and another with a low Max Distance value to bring out the detail. All AO layers have the blending mode set to Multiply C, and I set the Opacity to whatever looks the best, usually less than 50%.

Make a copy of the colour layer and connect it as a clipping mask to the AO layer. Then set the blending mode of the colour layer to Color. This converts the grey of the AO layer to a colour that matches the colour layer, but retains the tonal value of the AO layer, producing a result that is slightly more saturated than the original, so you may need to reduce the Opacity of the colour layer as well.

04 Original render vs Ambient Occlusion composited image

Here, you can see the original render compared to the one composited with Ambient Occlusion layers. The original (on the left) was rendered with two directional lights, one as the main and the second as the fill D. The effect can be subtle or heavy-handed, depending on how high you set the Opacity of the Ambient Occlusion layers.

05 Use an Ambient Occlusion pass with a Final Gather render

Adding an Ambient Occlusion pass to your composite can also improve images rendered with Global Illumination or Final Gather E. On the right is the original image composited with Ambient Occlusion, in the centre is a FG render and on the right is the FG render composited with Ambient Occlusion.

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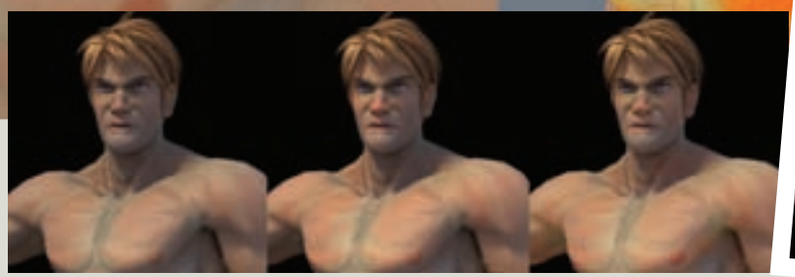
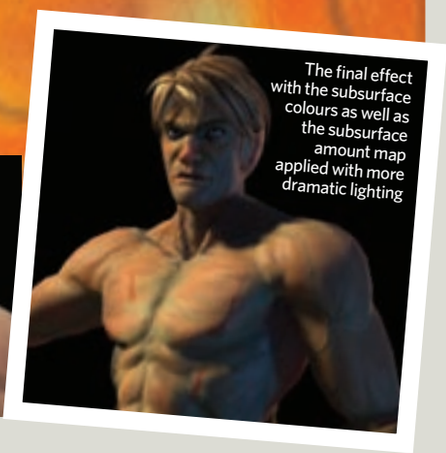


The mesh render with and without the subsurface colour map applied. Without a map, the colour of the skin becomes more uniform and less real



Wire in the blood

"How can I get colour variation into the skin of a character using subsurface scattering?"

Manuel Martinez Spain

01 Create a subsurface colour map

Use the skin texture map as a base and increase the brightness and saturation to get a vivid map with bright blown-out colour. It is helpful to add additional saturated colours for veins and bony areas that the original colour map might not have.

02 Adjust the subsurface effect

Add the subsurface colour map to the skin shader and the skin will start to become more saturated. Then adjust the scattering distance to get more colour along the lit edges but limit the effect within thick shadowed areas.

03 Variations of character skin

For a softer look, increasing the distance and front weighting is useful, however, too much will cause the surface to look more like wax. By applying a greyscale subsurface amount map, the waxy look can be more controlled.

It is important to understand the colour range of skin and what the different colours represent. On a yellowish orange skin base, thick flesh areas are warm colours and bony areas are cool colours, more specifically yellow/blue over bone, red/brown over muscle, and blue/green over veins. More exposed parts of skin can get darker, so the top of a shoulder would be darker than the underarm, for example.

Subsurface scattering simulates the multiple layers of colour that comprise the varied appearance of skin. By using a modified bright and saturated duplicate of the skin texture map, it is fairly easy to control the subsurface colour.

The subsurface effect reacts to environment and temperature. The scattering distance or depth is used to control how far the light will penetrate the surface. I find that a distance between 5mm to 10mm works best.

Front weighting controls how much of the subsurface colour is shown; the default setting of 50% works well in sunlight.

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Caricature faces

"I want to model a caricature of a figure. I've got the basic mesh into ZBrush 3, but can you give me some pointers?"

Philip Morris Leominster, UK

ZBrush is a great application for creating caricatures in 3D. It contains a wide range of tools that allow faces and bodies to be pushed, pulled, squeezed, stretched or manipulated in any number of ways with a great deal of flexibility and freedom.

Before sculpting in ZBrush, however, it is important to start by gathering as much photographic reference material of the subject as possible. A variety of views displaying different angles, expressions and poses will allow an artist to continually re-evaluate a model throughout the sculpting process.

Caricature portraits can flatter as well as disfigure a subject. Consider what the finished work will communicate about the person; if the subject is a celebrity, they'll almost certainly have some sort of persona that may be utilised. Could a caricature benefit from an anthropomorphic transformation to emphasise a character trait? Humour is an important factor in the success of any decent caricature.

Basic sculpting

Before manipulating features, it can be a good idea to establish a rough likeness with fairly realistic proportions. Setting up front and profile image planes in ZBrush for reference is a great way to do this quite quickly (prepare your own sketches for this purpose to ensure that the front and profile views align).

Establish the overall shape of the subject's face and pay particular attention to the relative proportions of the features,

such as the proximity of the eyes to the nose, the size and shape of the chin and forehead, etc. Many artists like to use the eyes as a starting point. More often than not, getting these right will enable everything else to fall into place.

Exaggerating features, bringing a character to life

Concentrate on just two or three main features to distort and take care not to get carried away too early on in the sculpting process, otherwise any likeness may be lost. Keep the Z Intensity of brushes relatively low to ensure that the deformations happen gradually until they start to feel right. Great tools to use for caricaturing faces include the Inflate brush, which can be used to distort bulbous features, such as noses, foreheads and chins, while the Move brush is perfect for pulling features around to form a range of expressions.

Any portrait will always feel more alive wearing an expression that reflects the subject's persona in some way. This can also be exaggerated to enhance the caricature further.

Making it work in 3D

It is important to continuously tumble the model in 3D space while referring to the reference material. It can be all too easy to create something that may work from one particular angle, only to find that the likeness falls apart from an alternate view. Online forums are full of examples of otherwise well-executed portraits that simply don't feel quite right, often as a result of using too little (or even just a single piece of) reference.

Even if the intention is to parody a well-known photograph or movie scene, knowing how the subject looks from a variety of angles is crucial to achieving an identifiable likeness in 3D.

Concentrate on roughing out proportions with low subdivision geometry before sculpting details

Front and profile image planes will enable a rough likeness to be established, prior to distorting features

Don't get bogged down sculpting detail too early; begin by roughing things out using low subdivision geometry

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3ds Max 2010 is capable of very high-quality rendering

Sliders let you quickly control the quality of mental ray renders

3ds Max 2010 $3,499

Christian Darkin checks out the latest version of the industry goliath, which features a completely revamped modelling toolset

In terms of 3D applications, 3ds Max is definitely in the premier league. Max and Maya are present in almost all companies regularly producing 3D for the media, games and architecture fields.

With the two packages now owned by Autodesk, you'd think there would be increasing pressure for them to either diverge to fill different markets or converge to become one program. But that doesn't seem to be happening, and although Maya is more often found in film and TV applications and Max is more common in games and architecture, there's still a lot of overlap and it would be a mistake to cast one or other package as more suited to either market.

As of the last update, 3ds Max now appears as two different versions: 3ds Max Design and 3ds Max. In Max 2009, there was virtually no difference between them, and in version 2010 there still isn't. The only distinction is that Design has a lighting analysis tool, whereas the other version includes a software development kit.

Modelling and keyframe animation have always been strong points, and over the years plug-ins for dynamics, cloth and hair have been absorbed into the standard program. Biped – 3ds Max's character animation plug-in – is also built-in, providing footstep-driven and free-form character animation. Biped has grown over the years into a flexible nonlinear animation tool that can handle multilegged creatures and even has some tools for controlling crowds.

If you've got more than one PC, either renderer can be used over a network using the bundled Backburner application – allowing you to set up your own render farm for free. Network rendering on 3ds Max is a little temperamental, and you can end up with a few strange effects like missing map files and flickering animations if you don't set it all up correctly.

The basic workflow of creating objects, adding modifiers to edit and animating them hasn't changed, and the layout – with the right-hand panel displaying details of whatever object is currently selected and the bottom strip giving you control over the timeline – is the same as it always was.

Version 2010 is a significant update, and that's welcome because the last couple of releases have simply streamlined the package under the bonnet. They've rewritten underlying code, refined procedures and added a few workflow tweaks, but by and large the package's features have remained the same for a couple of years. Max has become faster, but not much more exciting. This time around, Autodesk has done more obvious work and the program looks and feels significantly different.

What you see in the viewports can now be brought a lot closer to what you'll see in the render. You can now preview accurate shadows including soft shadows, so you know what's correctly lit and what isn't, as well as Ambient Occlusion (not perfectly, but it's an impressive tool nonetheless). You can even interactively preview the effect of mental ray's exposure controls.

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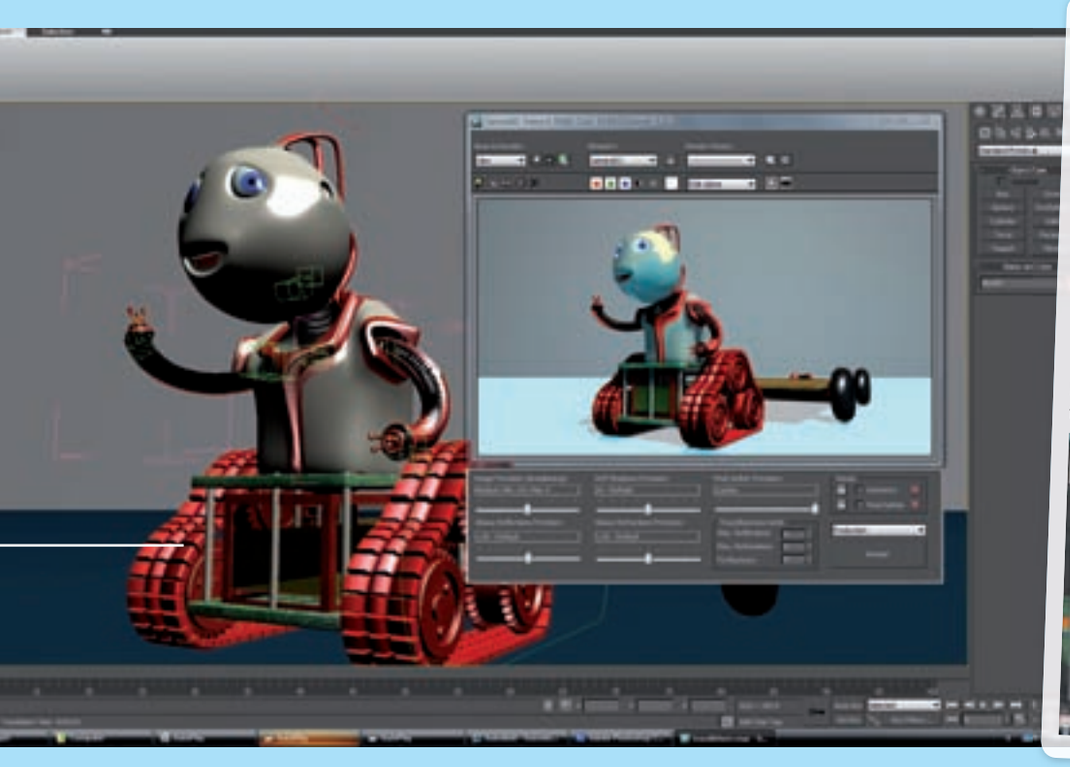
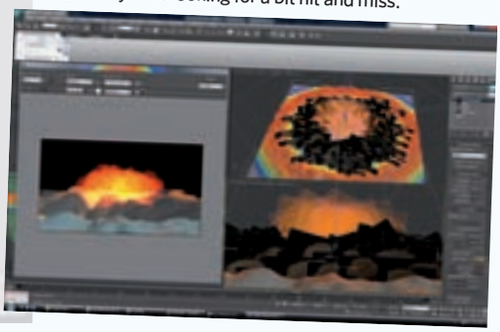


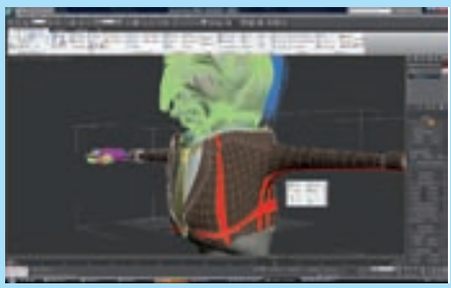
Supporting materials

3ds Max 2010 ships as two DVDs: one for the program and one for supporting content. Installed with the package is a selection of Essential Skills Movies. These video tutorials are aimed at new users and will give a basic rundown of the interface and workflows. They're by no means comprehensive, and you're likely to need additional tutorials if you're new to Max.

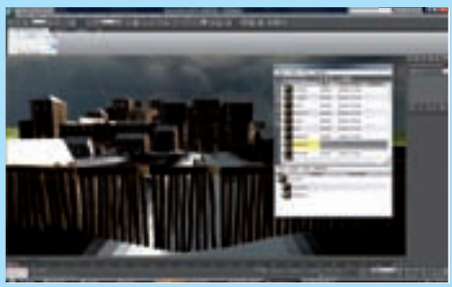
The supporting content disc includes a range of scenes and assets including a decent motion capture library, and a whole range of scene files showing off everything from particle flow to hair and fur. These are well worth working your way through, and will even give advanced users some new ideas.

A selection of scripts are also bundled with the package, but they're unsupported and undocumented, which makes finding what you're looking for a bit hit and miss.

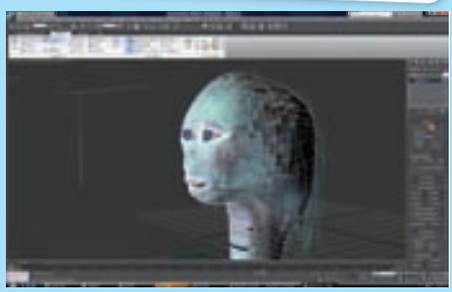




Graphite tools
The new Graphite tools are fast to work with and flexible to boot



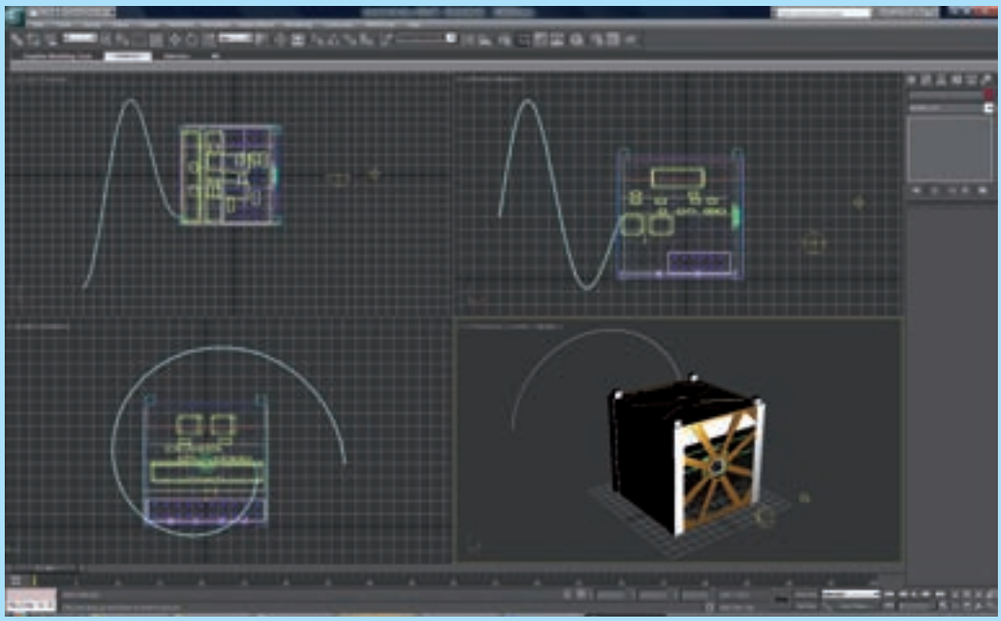
Material Explorer
The new Material Explorer offers great control over large scenes



Free-form modelling
The free-form modelling tools allow you to do ZBrush-style sculpting

This will save artists a lot of time in test renders and will be welcome to anyone used to days of waiting when tweaking render settings. However, there's one caveat. This shading takes a lot of graphics processor effort, and Max isn't a videogame so you won't get real-time playback for anything but the simplest scene. You'll probably end up leaving these tools turned off most of the time and only engage them when you're messing with render settings.

There's now an additional tool for anyone using mental ray. You can tweak rendering quality with a set of simple sliders and checkboxes in the render window, so it's easy to produce low-quality test renders quickly. Being able to quickly set anti-aliasing, Final Gather and Raytrace depth means less messing around with the fine details of mental ray, and having the sliders visible at the bottom of the render window means you won't forget what you've set where so you're less likely to ruin a 24-hour full-quality



The new interface is darker and some of the icons have been remodelled

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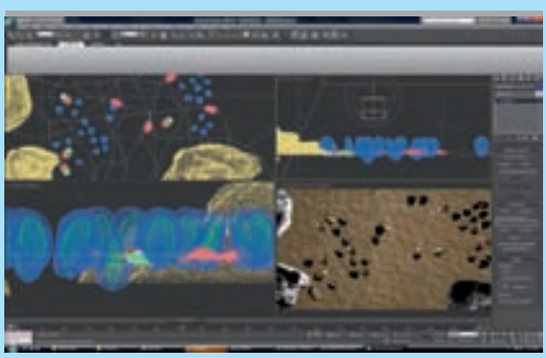
A sample render showing volumetric light and organic textures

render because you've left the soft shadows at the wrong setting.

The overall look of 3ds Max has changed, too. The interface is darker, and many of the icons have been slightly redesigned and reorganised. The file menu has shuffled up above the rest of the menus, and a new ribbon menu below the top row of icons houses the new Graphite modelling tools.

It's a pretty brave decision by Autodesk to take what was already recognised as one of the fastest sets of polygon modelling tools around and replace them lock stock and barrel with a new system. However, that's exactly what they've done in creating the new Graphite modelling tools for Max 2010. Graphite contains all the usual Bevel, Extrude and slicing tools, along with lots of options for smoothing, subdividing and refining your mesh. Each tool is well thought out and easy to access from the top menu, and the whole process of subdivision modelling is now concentrated on your model rather than on the right-hand control panel.

The newly added free-form modelling tools are a little like those in ZBrush or Mudbox. Don't get too excited – these are definitely not a match for the intuitive clay-style modelling tools in these packages. However, the ability to mould and stretch your models interactively is a great step forward. The tools available include painting bumps and dents, smoothing, adding noise and relaxing.



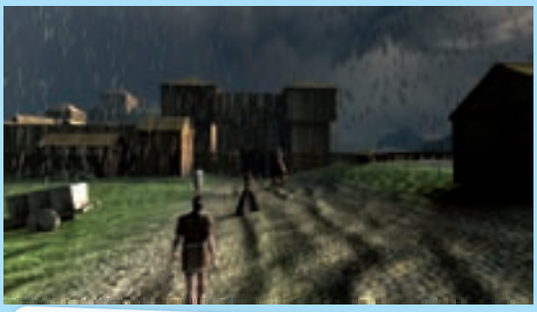
Containers help you deal with those scenes that contain a large number of objects

There are also a range of free-form tools for drawing out extrusions and adding polygons and shapes, so you can sculpt tree branches or stamp shapes into your geometry. You can even paint optimisation – reducing the number of polygons in a part of your model just by 'painting' them away.

There's now a new Material Explorer to complement the Material Editor. This allows you to keep the materials in your scene organised – dragging and dropping them onto objects or altering aspects of them globally, which is useful if you're working on a very complex scene.

You can also now create container helpers to help organise complex scenes. For example, you could put all the cars in a city model into one container, so you can turn them on and off easily while you work.

A new Viewport Canvas tool has been added, allowing you to paint textures onto



Graphite modelling

Graphite modelling is really the centrepiece of this update. Over 100 new polygon modelling tools have been added, while the whole process of subdivision modelling has been reworked (although fear not, you can still use the old tools if you want to).

You can now bevel, extrude and hinge new polygons more quickly, as well as switch between tools more interactively, but there are also lots of new options for selecting and working with different subsets of polygons, quickly adding and removing detail and defining edges. The modelling menus can be pulled out and placed anywhere on screen to make them more accessible, and detailed explanations appear when you hover over them.

The Edge and Loop tools are particularly elegant, with the ability to quickly select and manipulate loops and rings of polygons. Flow tools are also helpful, allowing you to produce new geometry that's sympathetic to the shape of your original object without forcing you to go in and resculpt the new points. There are also options for skipping every other polygon or edge if you want to. You can even select random vertices, edges or polygons.

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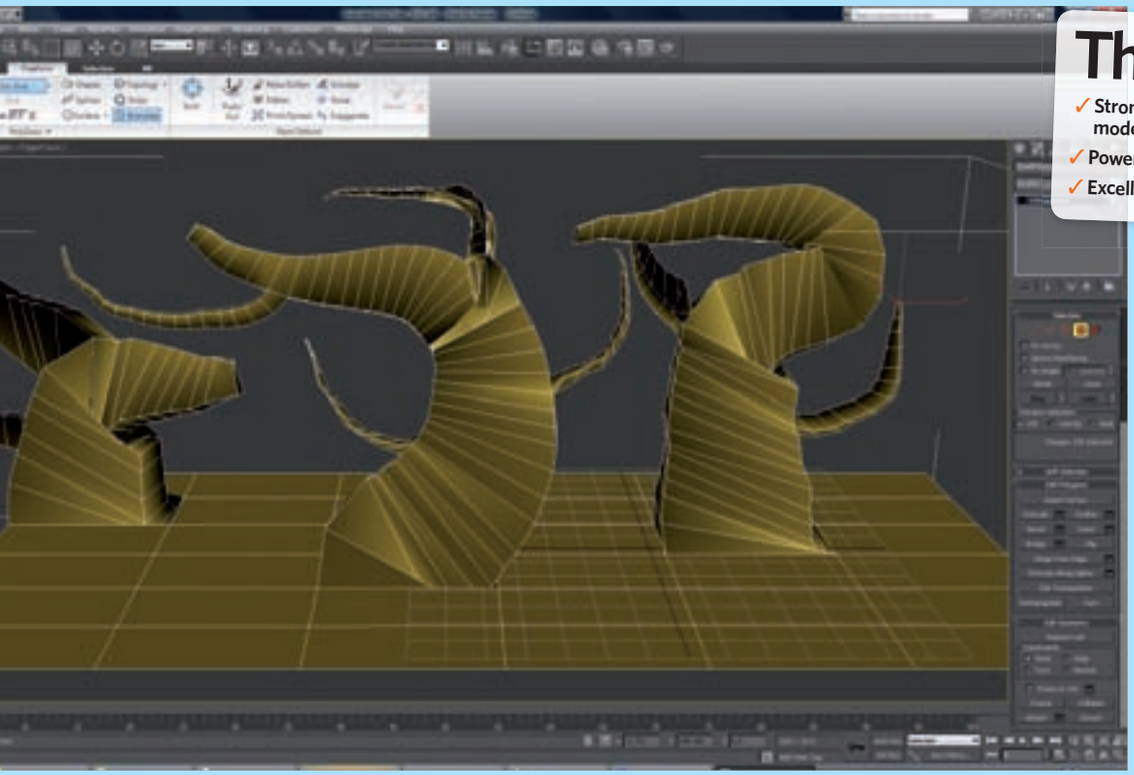


The good & the bad

- ✓ Strong set of modelling tools
- ✓ Powerful rendering
- ✓ Excellent animation tools
- ✗ Expensive
- ✗ Limited tutorials

Essential info

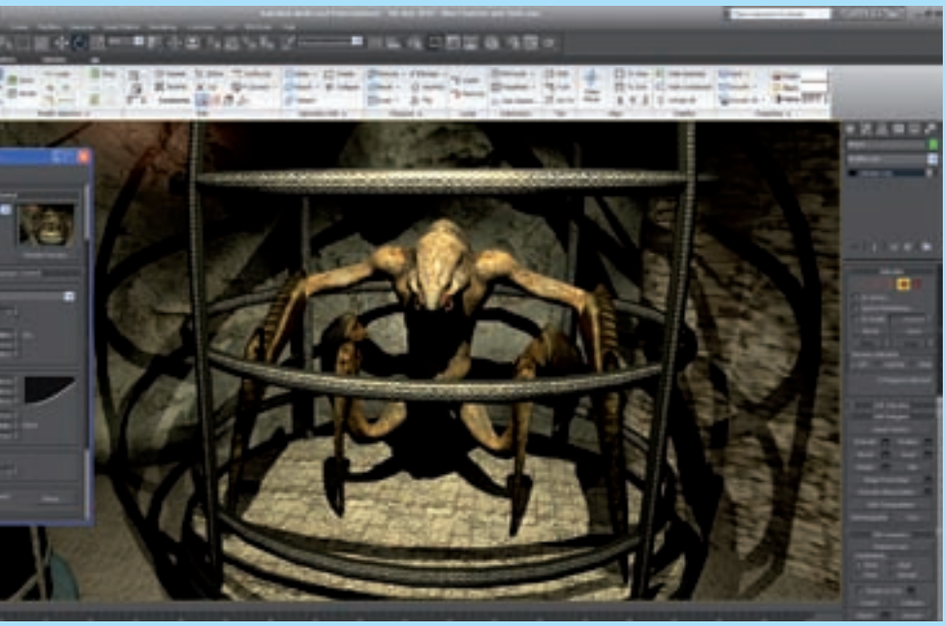
www.autodesk.com
$3,499 US

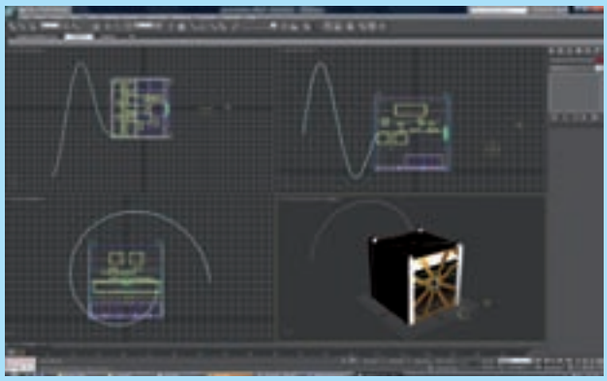
OPERATING SYSTEMS
- Windows Vista/XP

OPTIMAL SYSTEM REQUIREMENTS
- 4GB RAM
- Direct3D 10
- Pentium 4

> All in all, this is an important upgrade, especially if you do a lot of modelling

Left: The free-form branches tool creates tree-like branches from single polygons





Above: The new interface is darker and some of the icons have been remodelled

Left: Real shadows in the viewports take the guesswork out of renders

objects in the viewport using Photoshop-style brushes. There are a range of brushes and a clone option, so it will be useful for fixing seams and for roughing out textures to be refined in a 2D paint package later.

Additional updates add more particle flow nodes, improve hair and cloth slightly and give character animators more subtle control over hand posing. There's also a handy Quadify Mesh modifier, allowing you to get much more pleasant smoothing results when subdividing oddly shaped polygons (for example, when you extrude a flat shape), as well as a couple of neat tools for capturing model information to bitmaps.

All in all, this is an important upgrade – especially if you do a lot of modelling. The new Graphite modelling tools contain a few gimmicks, but their workflow is much smoother and more intuitive. The rendering sliders and the ability to see accurate shadows in the viewport is going to speed up the tweaking of final renders. The Viewport Canvas and Materials Explorer feel as though they will be great tools, but neither are quite there yet.

Our verdict

Features	8/10
Ease of use	7/10
Quality of results	9/10
Value for money	7/10

> Regular users will like the extra tools, but this is unlikely to reel in many new buyers

Final Score 8/10

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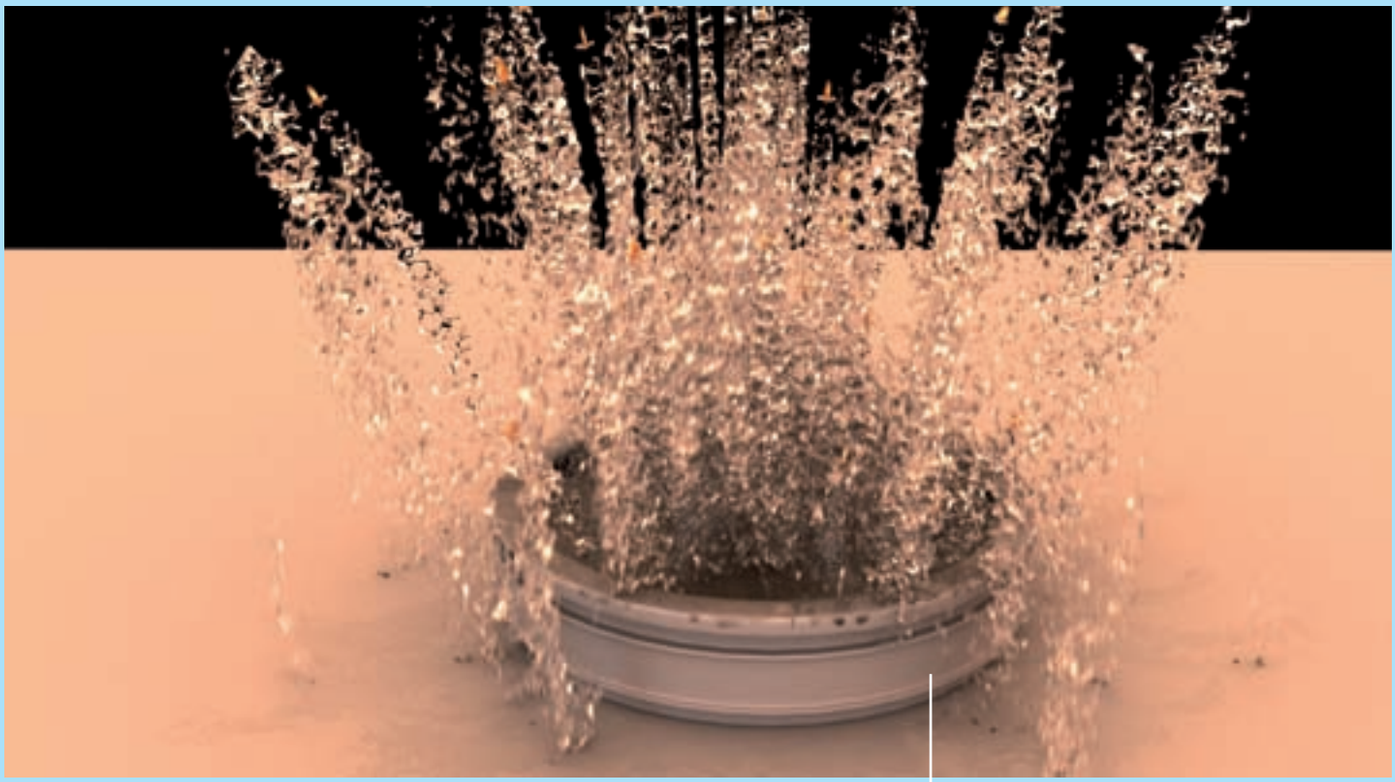


Fluid simulation tools allow for a range of realistic effects

Houdini 10 $7,995

If you want your animations to run themselves, Houdini could be the way to go

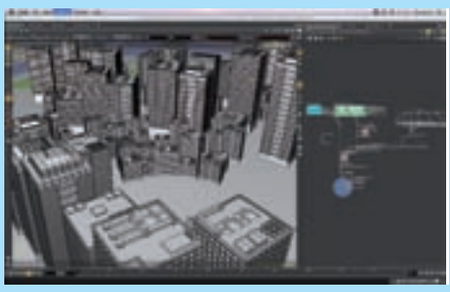
Houdini 10 is an animator, a modeller and a renderer, but it is not there to replace Maya, Max or LightWave. Instead, it allows you to set up the rules by which your scenes are built and animated. Think of Houdini as a way of controlling chaos.

It's a node-based system for building 3D effects by plugging together different entirely self-contained elements. There are nodes for generating objects, particle nodes, rendering nodes and dynamics nodes. Some are for specific jobs (like creating foam on the top of water waves), while some are very general (like the noise node that generates random noise).

The practical upshot of all this is that it's possible to build very complex effects and scenes very easily. If you make a simple motion with a couple of keyframes, you can then include a node to add randomness. You can add more nodes to create dynamics effects, squash and stretch, particle effects or even hair. Each node has its own controls and each can be turned off or connected in a different way to alter the effect.

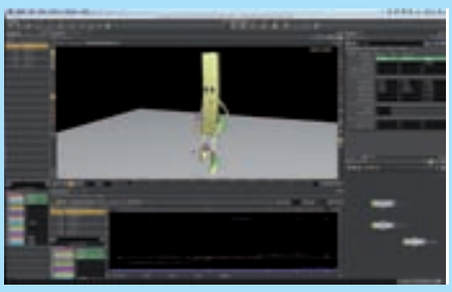
Imagine being able to use audio to automatically drive the movement of a character, or producing a randomly generated city from a selection of doors, windows and building shapes. Houdini 10 makes this reality.

Houdini's interface is dominated by the viewport, but the real work tends to get done in the node display at the bottom right. Here, nodes are represented in a schematic



Buildings
This city has been generated randomly from a selection of pre-designed architectural parts

Volumetrics viewport
Houdini 10 has some impressive tools for volumetric smoke and fire effects



Chip
Character animation tools are powerful and quick to set up

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Houdini can create effects that would be very difficult in other packages (image courtesy of Darkside Animation, Nick Scott Studios and Kemistry)

The good & the bad

- ✓ Great fluid simulation
- ✓ Powerful particle effects
- ✓ Flexible node-based system
- ✗ Far more expensive than other 3D applications
- ✗ Steep learning curve

Essential info

www.sidefx.com
- **$7,995**

OPTIMAL SYSTEM REQUIREMENTS (MAC)
- Mac OS X on Intel-based Macs
- 2-4GB
- Recent 32- or 64-bit processor

OPTIMAL SYSTEM REQUIREMENTS (PC)
- Windows XP or Vista
- Linux
- 2-4GB
- Recent 32- or 64-bit processor

Below: Basic block render of a design prior to adding animation paths and effects

> A fine program with powerful features and capable of some great effects

diagram so that you can easily add and remove nodes and connect them together. Select a node and the controls available for it appear in the window above.

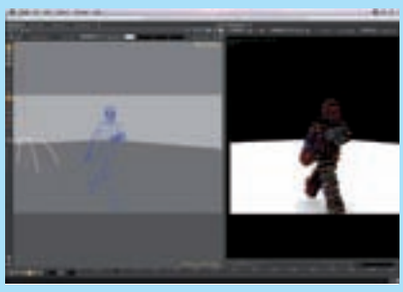
As you tend to build up huge networks of nodes for even a simple project, there are a few tools for simplifying things. You can add colour-coded boxes to encapsulate a group of nodes, and you can collapse networks of nodes into a single node once you've finished messing with the internal workings of it.

As you'd expect, this kind of system is great for handling situations where a lot is happening on screen. Particles are a good example, and you have a high level of control over how your particles behave and interact with each other and other objects. Dynamic simulations are another speciality and are both easy to apply and robust whether you're working with soft or hard objects. The program is great for fluid simulations and provides much more flexibility than any of the general 3D applications. You can create both particle fluids (generally best for splashing and pouring) and volume fluids (great for bodies of water, as well as smoke and fire effects). There's also a good cloth simulator, which supports tearing and stitching as well as the ability to create objects that will dent if hit.

Houdini 10 also offers instant rigging for characters – pretty much, anyway. You can drop in a selection of ready-made rigs for quadrupeds and bipeds as well as ready set-up hand and face rigs. You can then do all your weight painting and rigging on a low-quality proxy mesh, and use the results on your full-quality model.

Houdini has been used in many feature films, including most animated movies, and big animation companies will usually have a copy simply for its particle and dynamics tools. However, smaller companies and freelancers have tended to leave it alone for one simple reason. Houdini 10 comes in two flavours: a cut-down version for $1,995, which leaves out most of what makes the program worth having, and a full version priced at $7,995.

At the end of the day, this is a fine program with lots of powerful features and it's capable of some great effects. However, to most 3D professionals and small studios, it's simply not worth paying the equivalent of all the other major professional 3D packages on the market put together.



Wireframes
Dual view with the wireframe and animation path on one side and a preview on the other

Our verdict

Features	8/10
Ease of use	7/10
Quality of results	9/10
Value for money	4/10

> A great program with a flexible approach, but far too expensive for most professionals

Final Score 7/10

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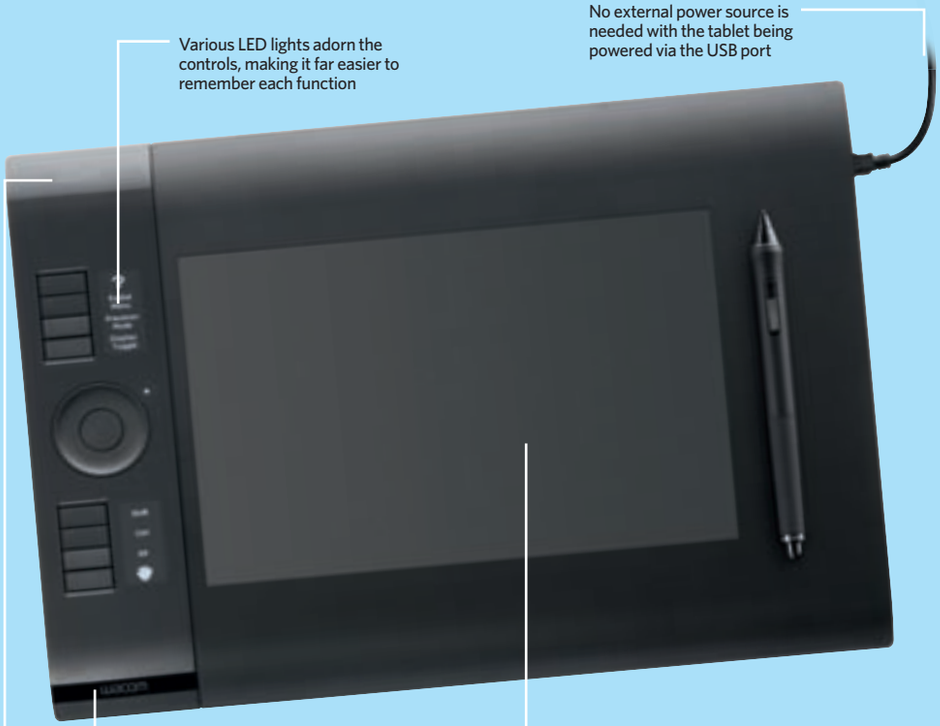
Wacom Intuos4 PTK-1240-C £700

A graphics tablet so big that you may need a new desk to accommodate it into your working environment


Various LED lights adorn the controls, making it far easier to remember each function
No external power source is needed with the tablet being powered via the USB port
The Wacom Intuos4 can be used in either direction, making it perfect for right- or left-handers
Although the surface area of the touch pad is large, there's a major issue with leaning on it while drawing

The controls that run down the side of the tablet are extremely useful, especially as the LED lights indicate what functions they relate to

Graphics tablets are the kind of accessory that no ZBrush, animator or Photoshop user should be without, providing they can afford one. Wacom's range of tablets at least allow for some modicum of budgeting, although right near the top of the scale is the 1240 range, which offers a mind-boggling amount of options for around a wallet-worrying £700.

For the cash, the Intuos4 PTK-1240-C comes with a pen... and that's about it. Fortunately, not too much setting up needs to be done to start working from the off, with just a touch of software installation required to unlock the user-definable buttons. Running down the right or left – as the Intuos4 can be spun to suit – are eight buttons that can be given individual settings. Not only is this a massive timesaver and prevents the user having to stretch across to the keyboard, but each key can then be given an individual display to indicate the function. Additionally, this can be set up by the user, alongside separate profiles for different program and desktop usage. Fortunately, the customisation of these controls was frighteningly simple, being virtually point and click. This allows for some rapid program switching without the user constantly scratching their head as to what key corresponds to which feature.

In the centre of the button collection is a touch wheel, which again can be attributed different functionality, such as rotating and resizing. This became second nature to use after the initial setup and, much like the pen system, was just on the right size of sensitive to be usable. The pad and pen setup is, of course, Wacom's speciality and it rarely makes a false step. Even for navigating the desktop the pen isn't a hindrance, although drop-down menus took a little getting used to. As ever the sensitivity can be altered to suit, so those of us who are slightly heavy-handed can ensure there's plenty of give to be had. Even the design, which is pretty far from a concern when reviewing a tablet, is suitably space age, making the Intuos4 perfectly at home on a desk or the bridge of the Enterprise. The only real stumbling block is the price, making more of a prospect for the professional rather than a budding animator. In fact, the version we reviewed is catered for usage in CAD, but there are variations available for other programs. With enough cash, though, this should last and will doubtless improve both the speed and quality of your output.

Essential info

www.wacom.com
● **Download**

OPERATING SYSTEMS
● Microsoft XP/Vista, Mac OS X 10.4.8 or higher

OPTIMAL SYSTEM REQUIREMENTS
● CD-ROM drive, USB port

> "The pad and pen setup is Wacom's speciality and it rarely makes a false step"

Our verdict

Features	9/10
Ease of use	8/10
Quality of results	8/10
Value for money	6/10

> "An expensive gadget that allows for an incredible level of creativity and control over even the most minor of details"

Final Score 8/10

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Snap Art 2 £125.41 ($199)

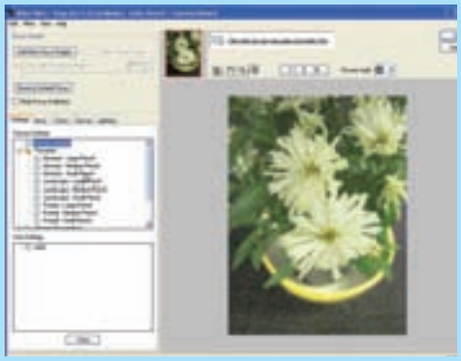
Enhance your Photoshop compositions with this plug-in

The Pencil tools can turn virtually any image into a drawing, and works particularly well on those with well-defined edges

Designed to give Adobe Photoshop a few more filters to call on, Snap Art 2 is a plug-in with more than just a single application. The various filters on offer stem mostly from an 'artistic' source, giving the opportunity to turn standard images into pen or pencil drawings.

Thankfully, the plug-in is backwards compatible, which means it is able to support the likes of CS2 rather than purely the very latest incarnations. Installation is fast and simple with little fuss and the interface is both friendly and straightforward. Once installed into Photoshop, Snap Art 2 sits at the bottom of the Filter menu, giving short cuts to each individual plug-in rather than forcing a whole menu system on the user. Once a filter is selected the menu system pops up, allowing for further tampering with the settings to adjust them to your liking. Although things are still kept to a simplistic level as far as filter selection is concerned, the alteration is a touch more in-depth, which ought to please professionals.

Each setting is given a number of sliders to manoeuvre and the amount of alteration is pretty impressive, giving a degree of control over most of the major settings. Using its own preview window and enabling the user to save the changes made to



the filter settings makes mass production of the same effect (for instance single frames of video) such an easy task.

The end result is far more polished than the built-in options that come with Photoshop, even after the first few attempts. There are far more variations to the simple Pencil filter, though, and the likes of the Comics option shouldn't be considered as just a 'fun' plug-in to mess around with and dismiss as too chintzy for a proper project, as it produces an effect that is actually usable. Even the presets have a fairly wide amount of choice to go through, making Snap Art 2 a valuable asset for digital artists.

www.alienskin.com

Our verdict

Features	9/10
Ease of use	8/10
Quality of results	9/10
Value for money	7/10

"A collection of filters that'll impress artistically led Photoshop users"

Final Score 9/10

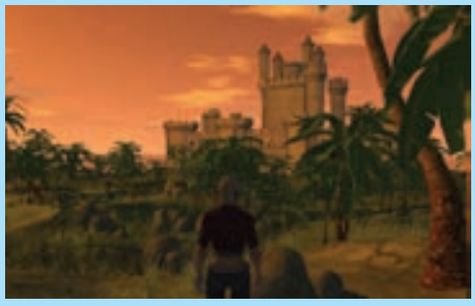
DX Studio 3.1 £287.50

A budget 3D animator, but is it value for money?

The term 'budget' is extremely relative, as anyone trying to purchase such a product in the realms of 3D animation can testify. With a price point at a little over £285, DX Studio 3.1 fulfils that claim somewhat better than most, although a saving against some more auspicious programs by sacrificing functionality would do little for the program's perceived value. The freeware version of the program is definitely worth downloading anyway, though, especially if you are a budding designer with little in the way of capital, in which case, you're not alone.

The DX Studio 3.1 software is intended to give game designers and simulators a tool to help create a virtual world. Needless to say, this isn't particularly a program that's aimed at the beginner, as the interface gives little indication where to start. Once the help file has been traversed, it shouldn't be long before small environments are being created, although DX Studio 3.1 does expect a certain amount of groundwork to already be done. Any three-dimensional objects must be imported from elsewhere, which makes the program more of a middleman than an all-in-one.

One particularly helpful tool in DX Studio 3.1 is the new preview system, which is surprisingly rapid and is accessible through a button press on the interface. As the majority of these functions utilise the helpful Microsoft-based DirectX tools, the program is therefore Windows-only, unfortunately forcing Mac owners to look elsewhere. Although DX Studio 3.1 has plenty of potential to be a useful tool, don't expect to just dive straight in. This is for the more experienced user looking for a cheaper way of creating a scene.



With the correct assets brought into DX Studio and a little time to get used to the interface, stunning environments such as this can be produced

www.dxstudio.com

Our verdict

Features	8/10
Ease of use	4/10
Quality of results	7/10
Value for money	8/10

"A useful 3D animation tool that will certainly help anyone wanting to start out in game design or simulation"

Final Score 7/10

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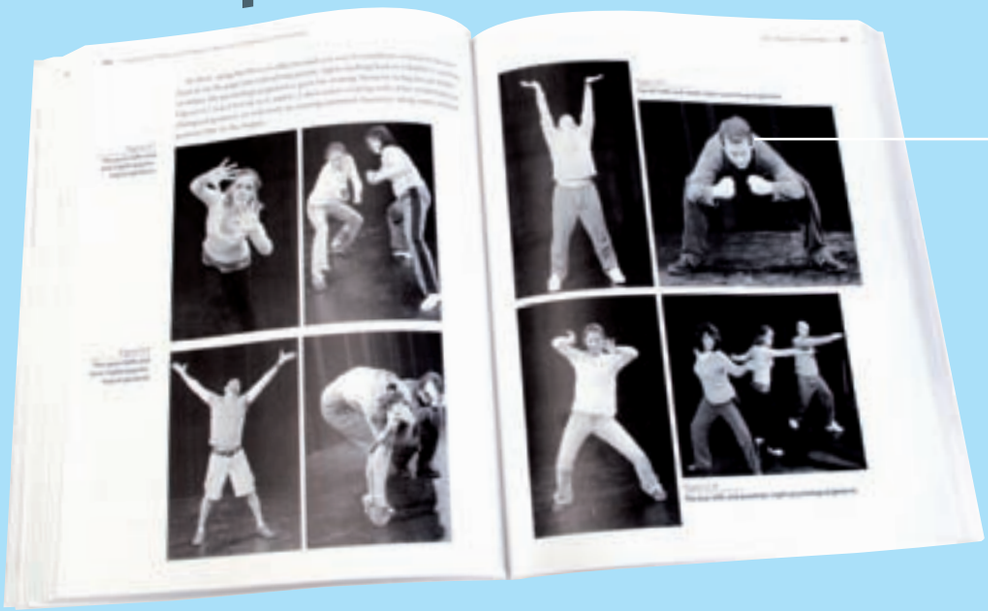

EXPRESSION AND ACTION
These 'psychological gesture' exercises are based on the work of Michael Chekov, an acting teacher and nephew of the playwright Anton Chekov, who was famed for his realistic characterisation

Action! Acting Lessons for CG Animators $49.99

Learn to be a luvvie in this guide to acting for animation

info

AUTHOR
- John Kundert-Gibbs
  Kristin Kundert-Gibbs

PRICE
- $49.99

PUBLISHER
- Sybex

ISBN NUMBER
- 978-0-470-22743-5

Let's get one thing out of the way before we start. Your correspondent has something of a passing acquaintance with the techniques used in theatre and film. We know our method from *The Madness of King George* and can even point to the fourth wall if necessary. You'd think that this would make our approach to *Action! Acting Lessons for CG Animators* a bit more reverent. Nope – we're still going to have a thoroughly good giggle. And how can we not when opening this book to any random page yields honeyed prose such as "The Wring Effort shape is composed of... strong, flexible and sustained qualities"? Before you assume that this excerpt is quoted from an in-depth guide on how to model a complex and twisting shape, it's not. No, it's about how to 'really feel' the motion of wringing out a towel...

Now, *Action!* does fill a market niche. If you're starting out in CG, then most of the resources you'll exploit for voices and motion capture will be yourself, your family and your friends (provided that you have any left after putting them through these exercises). There's absolutely nothing wrong with acting in or voicing your own project. Famously, the kids in *Monsters, Inc.* and *Ice Age* were actually 'played' by the children of crew members, proving that studios like unpaid child labour just as much as the next sweatshop. But if you're going to star in one of your own projects, you'd better make sure that your acting skills or lack thereof don't distract from your real purpose. And *Action! Acting Lessons for CG Animators* is a distraction. Its muddle-headed approach skims from sensible Maya character modelling and motion capture to loopy 'bioenergetic' exercises and advice on capturing 'essences'. There is some good information in here, most of which relates to the nuts and bolts of synchronising voiceovers and motion capture, but it's liberally padded with numinous, bean sprout-eating twaddle.

To successfully act in your own animation, what you really need to know is how to believe in the character you're acting or voicing, and be comfortable in that put-on skin. Truly great acting is about the ability to portray a truth believably and with subtlety, not skipping around in a leotard attempting to project the troubled psyche of an angry kitten through the medium of modern dance.

PHYSICAL PROPERTIES
These star-shaped diagrams are helpful as they show the way that certain archetypal characters such as 'The Psychopath' express movement and attitude in their limbs, head and torso

METHOD ACTING
Much of the better acting tuition in this book draws on the work of Stanislavski, creator of the method form of drama, which involves 'becoming' your character. You'll be prowling around the kitchen in no time!

AUDIO AND VIDEO
Some of the most useful information in this book is on how to do voiceovers for animation. Some of the least helpful? Did you not read the bit about becoming one with wringing out a towel?

...WHAT?
Steady now. A dinosaur and the sinking of the Lusitania. Only in an acting book could these appear on the same spread (breathe a sigh of relief, as it's actually about early Disney animation)

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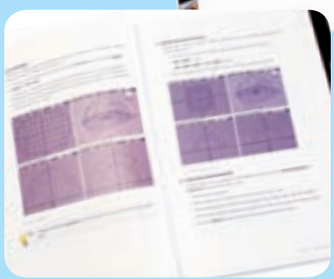
Learning Autodesk Maya 2009 £45

A foundation course in the basics of Maya animation

This book bills itself as a foundation course in Maya, but if you're unfamiliar with the software it may still be a steep learning curve. While it starts out with the basics of the program interface, a passing familiarity with key terms in 3D would be helpful if you're to get the most from this book.

You may recognise some of its contents from other collected Autodesk tomes from the same publisher (Autodesk's imprint with Sybex), and Maya beginners may find it useful to dip in and out of some of these before diving into this particular book. Get to grips with its language style, however, and the logical project-based presentation will soon enable you to start creating objects, characters and environments in Maya and eventually learn the basics of working with Maya Embedded Language to add extra power to your animation.

THE BASICS
Find your way around the Maya interface with this basic visual guide to the program's GUI – you'll learn how to work intuitively without it later!



PROJECTS
A logical lesson- and project-based structure allows you to progress through *Learning Autodesk Maya 2009* and, well, learn the basics of Maya

ADVANCE YOUR SKILLS
By the end of the book you will be exploring more complex subjects, such as particles and how to create the look and behaviour of dust and clouds

info

AUTHOR
● Marc-Andre Guindon

PRICE
● £45

PUBLISHER
● Autodesk/Sybex

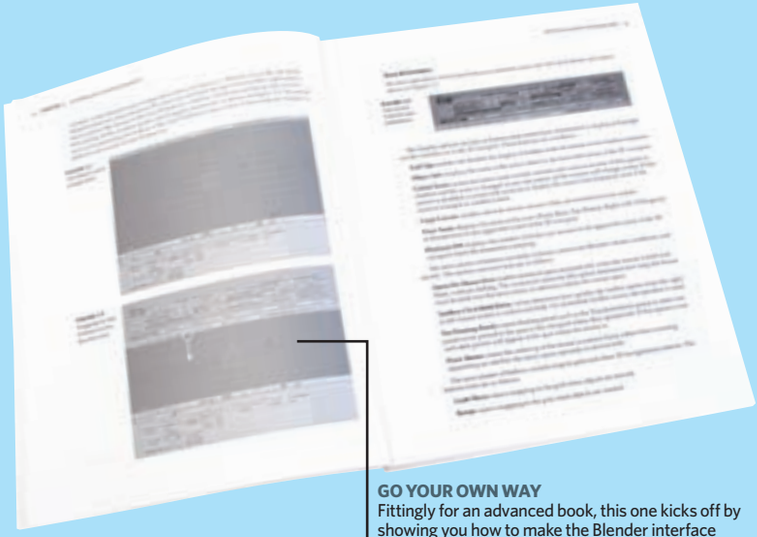
ISBN NUMBER
● 978-1-897-17751-8

Mastering Blender $59.99

High-end tuition for more advanced users

As you may infer from its title, this book on Blender is not for beginners. Aimed at intermediate and more advanced users, *Mastering Blender* assumes you have a certain familiarity with the software already. If you do, be prepared to go beyond the basics and learn some great new skills.

There are tips on creating more believable figures, a tutorial on creating faces (including eye creases) as well as video editing, compositing and digital painting from within the program. You'll learn how to add to the power of Blender using the Python scripting language and how to work with the Blender Game Engine to create assets and characters. For anyone who knows the basics of Blender and wants to push their skills further, this is an excellent resource and will make a dramatic difference to what you can do within the program.



GO YOUR OWN WAY
Fittingly for an advanced book, this one kicks off by showing you how to make the Blender interface your own using User Preferences

WORKING PROFESSIONALLY
A key chapter of the early part of the book takes a look at how to annotate and edit your work properly – vital for those who work in the 3D industry!

VIDEO TRANSITIONS
In *Mastering Blender*, you'll learn how to use Blender for many parts of your workflow, including creating transitions between animated scenes

info

AUTHOR
● Tony Mullen

PRICE
● $59.99

PUBLISHER
● Sybex

ISBN NUMBER
● 978-0-470-40741-7

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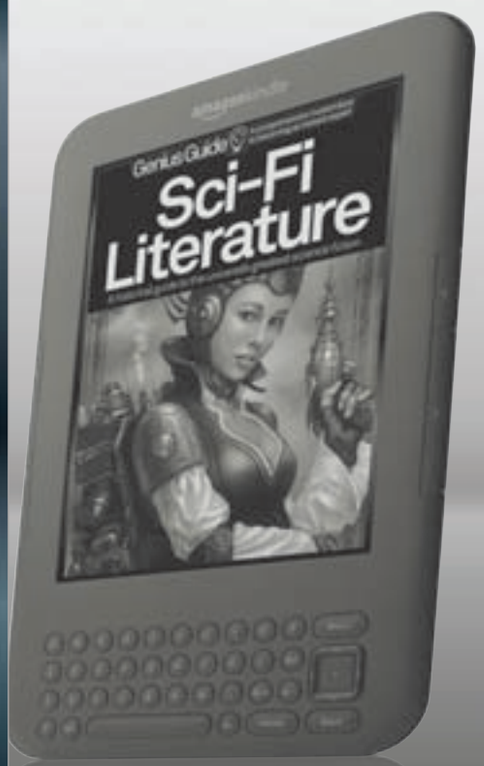

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Inside guide to industry news, studios, expert opinion and education

Aquarius
Soa Lee
Personal portfolio site
www.soanala.com

102 Insider interview
Jason Godbey
Each issue we interview an industry professional and ask them how they got to be where they are today. This month an environmental artist at Heavy Water is in the hot seat

096 News
Industry news
The latest software releases and updates, conferences, exhibitions and news from around the 3D world

098 Behind the scenes
Starbreeze Studios
Take one shiny-domed antihero, create a bestseller and return with more of the same, except make it drip blood. We talk to developer Starbreeze about how it created the look and feel of the Vin Diesel gaming sequel

inside

University of Cumbria
104 Uni Focus

The University of Cumbria
Want to do your 3D learning in picturesque scenery? Come to the Lake District and the University of Cumbria with the BA (Hons) Animation, FdA The Art of Games Design and MA Digital Arts courses all up for grabs

Jason Godbey on what kind of education a typical environmental artist needs to have.
Page 102

> “A foundation in the traditional arts helps. Having an eye for what looks good is what it comes down to and for the most part this is innate”

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A

Autodesk offers new solutions for education

The software company provides help for students to have successful design careers

C

Autodesk has unveiled five new industry-orientated software suites to help students learn core design and engineering skills using its range of 2D and 3D software packages.

The packages will be available globally in English and ten other languages. "Around the world, there is a tremendous need for engineering and design professionals with relevant education and technology skills to address current and future challenges," says Joe Astroth, Autodesk vice president of Learning and Education. "Our new software suites and curricula will help meet that need."

There are five Education Suites available in total for post-secondary education, covering four specific disciplines – Architecture and Engineering, Civil and Structural Engineering, Mechanical Engineering and Industrial Design – and a Master package with all the products in the other suites. Each of the bundles has the 2010 versions of the Autodesk products included, as well as curricula including professionally developed lecture notes, workbooks, projects and other tools. There are nine curricula in total, among which are Sustainable Design and AutoCAD Inventor.

Additionally, there are two suites for secondary education. Autodesk already offers an Animation Academy Suite to introduce students to 3D visualisation, animation and visual effects. Now it adds the Design Academy to its stable, looking at 2D and 3D software for the architecture, engineering and design industries, again with a range of curricula available.

Find out more at www.autodesk.com/education.

B The Student Design and Engineering Community offers resources and advice to enrolled students

A The curricula for all the suites are available at the Student Engineering and Design Community, an online resource for students and educators. The community has over 600,000 members, representing over 19,000 schools in 139 countries

C Students can download learning resources, search for internships and jobs, showcase their designs and discuss design topics, while there are resources for educators, too

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Rendering with mental ray

3D group releases 3ds Max 2010 training package

i3DTutorials has announced the release of its latest training package, Rendering with mental ray for 3ds Max 2010. This guide for the newest version of 3ds Max adds to the company's growing list of tutorials for the popular Autodesk package.

The new product introduces 3D artists to the advanced concepts and production workflows that are needed to render industry-standard, professional imagery. The step-by-step guides mimic complex scenarios and challenges in real-life production projects in order to help 3D artists completely master the mental ray renderer. The tutorials are designed to help 3D artists troubleshoot challenges and issues that can appear in the industry.

The training package covers everything from Global Illumination and Final Gather to area lights, caustics and mental ray daylight systems. Additionally, it takes a closer look at the new features introduced in the latest version of 3ds Max. The training product consists of six hours of video footage, and it includes all the project files and assets needed to follow along with the instructor. The package is broken down into different chapters, with large topics like Final Gather being split over a number of parts so that artists can take projects one step at a time.

Rendering with mental ray for 3ds Max 2010 is available as a download product only, and it costs $59.99 from the i3DTutorials website at www.i3dtutorials.com. Check out the website for full product information, and browse the rest of the range of training products while you're there.

D

> It covers everything from Global Illumination and Final Gather to area lights, caustics and mental ray daylight systems

D The package comes with all the project files you need to follow along with the tutorials

3D Realms closes

Future of *Duke Nukem Forever* unsure

Announced on various games websites and the 3D Realms forum but not officially confirmed, 3D Realms is closing its doors due to funding issues.

The story broke when a statement from Apogee Software and its publishing partner Deep Silver read that they were "not affected by the situation at 3D Realms." However, they confirmed that "development on the *Duke Nukem Trilogy* is continuing as planned." 3D Realms has been working on the highly anticipated *Duke Nukem Forever*, first announced in 1997, although whether it will ever see the light of day is a running joke on games forums, and this latest blow is likely to have repercussions for the project.

Pixar Animation opens new studio

The computer animator announces its new Vancouver location

Pixar Animation is planning to build a new 20,000-square-foot facility in Vancouver to produce its popular short features.

The company is currently scouting for a location, but the new studio will open up 75 to 100 jobs, mostly given to Canadians, and it will make all of Pixar's 3D computer-animated short films, while its theatrical productions will remain in California.

Vancouver was chosen because of its logistical benefits; it's in an English-speaking country in the same time zone as LA, plus the city is well known for being a good source of talent thanks to its high-quality animation studios and schools.

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Studio Access

The Chronicles of Riddick: Assault on Dark Athena

Duncan Evans talks to the Starbreeze team about their work on the latest adventure of our favourite shiny-headed uber-criminal

Starbreeze is a developer based in Uppsala, Sweden, which produces videogames for the Xbox 360, Windows PC and PS3 platforms

www.starbreeze.com

Project *The Chronicles of Riddick: Assault on Dark Athena*

Description First-person stealth action shooter set in the sci-fi world of the *Riddick* film saga. The game features online multiplayer and a single-person adventure, with intense cut-scenes and the voice of the actor playing Riddick in the films, Vin Diesel.

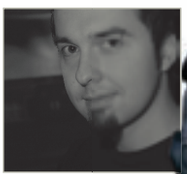
Country Sweden

Publisher Atari

Software used Autodesk 3ds Max, Maya, Softimage

Key people

Henrik Håkansson
Lead animator



Patrik Karlsson
Lead artist

Jerk Gustafsson
Lead designer/ game director

The Chronicles of Riddick: Assault on Dark Athena has some big expectations to live up to. The first *Riddick* game, *Escape from Butcher Bay,* was a testament to passion and ambition with its detailed environments and painstakingly constructed characters. Critically acclaimed for its achievements in graphical presentation and storytelling, *Butcher Bay* was one of the most atmospheric games of its era and seemed to hint something about high definition that consoles hadn't yet seen coming.

Many fans cried for *The Chronicles of Riddick: Escape from Butcher Bay* to be added to the growing list of games made compatible with the new Xbox 360. Technical difficulties made this a hard nut to crack, but instead of missing the opportunity to build on *Riddick*'s influence, games developer Starbreeze took on the task of producing a remake with a whole new depth of appeal. With the major graphical and animation advancements of the last few years, the challenge was to create an updated version that visually and technically impressed in today's competitive gaming climate. Essentially, the brief from Vivendi Games – the original publisher – was to create a high-definition and more adaptable version of the original, with a few extras thrown in to give it a new lease of life.

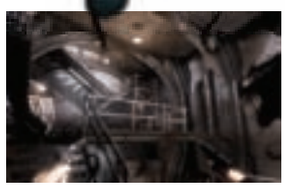
Originally, the aim was to update the game's internal engine so that it was compatible with both the Xbox 360 and the PlayStation 3. This scope soon expanded to include more content, multiplayer options and the potential to reach a larger audience. Before long, the team found themselves looking at developing a whole new adventure, and pretty soon they had a whole new *Chronicles of Riddick* beast on their hands: *Assault on Dark Athena*.

A

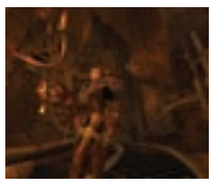
Starbreeze was both excited and well situated to work on the new *Riddick* mission, with all but one of the team having worked on its predecessor. Founded in 1998, most of the seniors in its 100-strong workforce gained their experience through many years in the field. Lead artist Patrik Karlsson joined Starbreeze Studios in 2002 as an animator, and with several years' expertise with Autodesk's Maya technology he's worked on a number of its published games. *The Chronicles of Riddick* are two of six games Starbreeze has produced – others include *The Darkness* and *Enclave*, and it is also working with top publisher EA on a new *Bourne* adventure. It's fair to

Portfolio highlights

Here's a quick look at what Starbreeze has developed to date



2009 *The Chronicles of Riddick: Assault on Dark Athena* – PC, Xbox 360, PS3
2007 *The Darkness* – PS3, Xbox 360
2004 *The Chronicles of Riddick: Escape from Butcher Bay* – Xbox, PC
2004 *Knights of the Temple: Infernal Crusade* – GameCube, Xbox, PS, PS2
2002 *Enclave* – Xbox, PC



A Vin Diesel himself was drafted in to act his part realistically, and then the data was fed into the system. The team then used MotionBuilder to process the data and build up a realistic impression of the character's movements

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say that Riddick's 2004 adventure had caused the biggest stir so far, and gamers everywhere waited with baited breath to see how he'd decimate 2009.

Being a sequel, *Assault on Dark Athena* didn't require its makers to reinvent the wheel. The team had already dealt with the issues of how best to portray the lead character of the film in a FPS gaming format. In fact, Vin Diesel had a blast filming his scenes – literally – and it's even been mused that if his movie career ever loses momentum then the door's firmly open for him to become the first gaming superstar. No, the real challenge was to expand on the graphical and technological achievements of *Escape from Butcher Bay* to bring the game up to date with a new mission and reignite the excitement of being part of a cinematic gaming experience.

So how was it done? With a team of 50 working on the project, the first step was to painstakingly brush up the texture of the visual presentation. The team layered each level with even more detail, so that each animation plays out uncompressed. Lead artist Patrik Karlsson explains: "When it comes to graphics we used a lot more polygons and more detailed textures naturally, but we also tried to take things further. Take the main character for instance. Not only did we make the textures a lot more detailed with a higher polygon count, we also added extra joints for the smoother deformation of the arms." So the 'tin-man effect' of game characters' movements now too joins the scrapheap of the gaming obsolete.

One of the major pulls of *Butcher Bay* was that Starbreeze had been able to successfully merge the film and game formats. Rather than spend all their time slicing/maiming/blowing the brains out of their enemies, players had to obtain vital and progress-dependant knowledge through interaction with

> "The challenge was to expand on the graphical and technological achievements of *Escape from Butcher Bay*"

B The game graphics have been improved from the original X-BOX game, using more polygons and detailed textures together. The main character also benefitted from extra joints for deformation of the arms

C Despite all the guns and sharp, pointy things there's still a large element of stealth in the game. Here Riddick is lunging out from the shadows to throttle some poor unfortunate soul who was only trying to earn a crust for his family

D The Chronicles of Riddick: Assault on Dark Athena available on the beloved XBOX 360 and the accursed PS3

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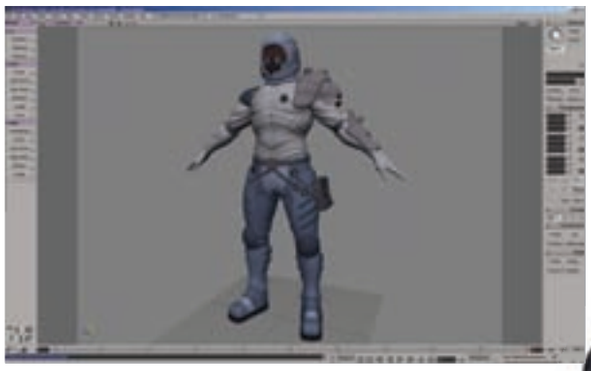

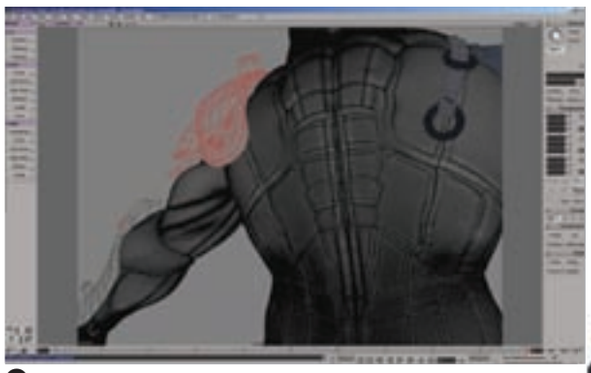

E

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other characters. A clear storyline developed that helped the player feel part of Riddick's world.

A key way to achieve this was through cut-scenes – the cinematic sequences that build up the story within the game. Far from being a brief interlude when you can relax, take a sip of your tea and then hammer repeatedly on the 'A' button, this was edge-of-your-seat stuff. These scenes mattered, you'd earned them. And they had to be realistic and impressive to stay true to the film/game hybrid nature of the format. The team used Autodesk MotionBuilder, the industry leader in 3D animation software, to create fully manoeuvrable characters, position the cameras in the right place and place the cuts seamlessly within the game. This built the storyline gradually, and allowed the player to feel that they were not only playing a game but also becoming part of a movie.

"Creating the cut-scenes is the most challenging part of the whole process," says lead designer and games director Jerk Gustafsson. A lot of time, money and energy went into portraying realistic, lifelike characters – so now the challenge was to create scenes that brought them to life. Showing believable scenes that not only advance the game but also develop the plot of the story has historically been a complex problem. Fortunately, Autodesk MotionBuilder has a versatile API that allowed the team to integrate their own toolset with the program.

Henrik Håkansson says: "We use MotionBuilder to develop our cinematics and then import the whole scene into our internal tool to put the final touch on it. Letting our animators work freely in MotionBuilder has made it easier."

As a result, what you see on the screen is the actor's full performance. Capturing Diesel's full body, face

E Most of the characters were modelled in Maya, though some used Softimage and 3ds Max and because of the inter-operability of the programs assets were easy to move from one to another

F Cut scenes are an integral part of the game, providing not only respite from the mayhem but information vital for progressing on to the next stage of bloody slaughter

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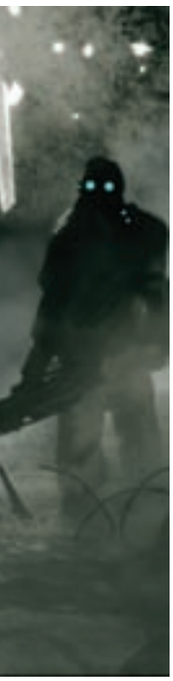

G

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> To make the characters believable, the team used a mixture of VO capping and dub-capping technology

and voiceover all at once really gives the storytelling aspect a boost. The new depth of field and motion blur greatly improves the cinematics, and a whole suite of post-processing filters and effects polished the look to perfection. This also lends a certain gore to fighting scenes. "He got new leather armour on his arms and we implemented a realistic blood spatter on those," adds Karlsson, "so he gets a pretty realistic look when fighting in mêlée." Well, that does sound like a Vin Diesel movie.

To make the characters believable, the team used a mixture of VO capping and dub-capping technology. Gustafsson explains: "We used VO cap for the parts where we really needed to capture the whole performance of an actor: his voice, facial and body animation. He'll wear markers all over his body and face, and then we'll use motion-capture equipment to record the animation while they deliver their performance. Dub-capping is similar, but we don't capture the sound in this case. Instead, we sync the actor's performance with a voice that we have already recorded."

After using MotionBuilder for the animation work, the team used Maya to model the game's 3D assets. Its integrated modelling and rendering function meant that they could customise their work in detail, and then bind it smoothly with existing technology.

"Most of our modellers prefer Maya, but some use 3ds Max and Softimage – they all work in our pipeline," says Karlsson. "Our main reason for using Autodesk products over other 3D packages is that it connects the animation and modelling departments, meaning that we can try out new rigs and animations, adjust skinning and export everything more smoothly. We'll sometimes use other packages to complement the process, such as 3ds Max, which is great for generating realistic characters. Our main concern is to create and produce the highest-quality model possible, in the shortest time possible."

And the team have certainly done that. Just two and a half years after it was first commissioned, *The Chronicles of Riddick* sequel *Assault on Dark Athena* is set to be a testament to passion and ambition once again. The cutting-edge animation and modelling technology that went into it shines through – a brainless shoot-'em-up it certainly isn't. Instead, in keeping with the original *Riddick* adventure, the gameplay exudes the intelligence, while Vin Diesel exudes the cool.

G Some plans and renderings for the in-game weapons to provide a range of firepower for Riddick

H Character outfit design - check out the autumnal hues. This being the miserable and grim future, everything looks like it's a 70s reject

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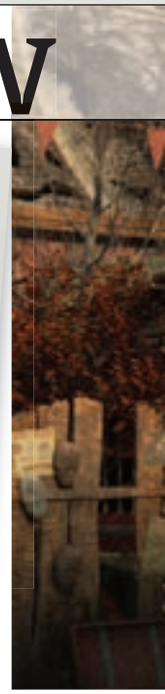
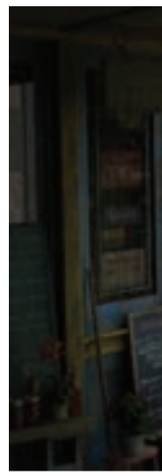
Industry insider

Jason Godbey

Environment artist, Heavy Water





Each issue, **3D Artist** finds out how people in the 3D industry got their jobs and what you need to know to get a foot through the door yourself

About the insider

Job Environment artist, Heavy Water

Education University of Alabama at Birmingham

Company website www.heavyh2o.com

Personal portfolio site www.jg-art.com

Biography Jason is a self-taught artist living in Carlsbad, California. He grew up in Birmingham, Alabama, and practised 3D on the side while attending university there. He made it into the industry through persistent dedication to his artwork and constantly promoting the work he did in his spare time

Jason Godbey is an environment artist working for a start-up company called Heavy Water, having previously been employed by Bottlerocket Entertainment in the same kind of role. As the company is in the start-up phase, Godbey also tackles some of the tasks that would otherwise fall to a technical artist – but creating environments is his main concern. These can be designed to interact in a games environment or be passive, like matte paintings as backgrounds, but in all cases they have to deliver a sense of the time and location.

3D Artist: *What kind of course did you do at university, or what training did you do?*
Jason Godbey: I graduated from university with a degree in Social Psychology and a Minor in Philosophy. I didn't study 3D there – it was something I learned on my own. It started out as a hobby but soon turned into a passion, and I decided to dedicate myself to it and pursue it as a career.

3DA: *For today's generation of students, what is the kind of educational grounding they should be looking to undertake in order to get a first job as an environmental artist?*
JG: Having a solid foundation in the traditional arts helps a lot. Having the eye for what looks good is what it comes down to in the end. For the most part this is innate, but it can be learned to a degree, and knowledge in the traditional arts (things such as form, composition and colour) can help that. Beyond that, it's mostly technical. The ability to learn the tools, and adapt to new techniques and workflow is what's key in this area. This is what is taught in most schools, but you can also teach yourself if you're dedicated, persistent and willing to take the time to learn these things on your own. A lot of the work and knowledge you gain will be on your own part. Working in studios, you're not going to have someone telling you how to do things all the time. It's up to you to take what you're given and make it look good. So it's good to be able to push and motivate yourself to get where you want to be and grow as an artist.

3DA: *What did you do before you joined the company and how did you get the job with Heavy Water?*
JG: I was working at Bottlerocket Entertainment as an environment and lighting artist, but unfortunately we had a couple of projects that got shut down and everyone was suddenly out of work. This kind of thing is pretty common in this industry, where projects get cancelled or a team gets let go after a project. On the one hand it can be good, because it keeps things moving along and you have more opportunities to live and work in different places, so you get to learn new things and meet a lot of cool people. On the other hand, the job security isn't always there and it can be stressful if you're looking to stay in one place. I got this job at Heavy Water through a producer I used to work with. He gave me a strong recommendation and got me in. Your network is extremely vital in this field. This industry is small, and with people moving around a lot you're bound to run into the same people over and over again, so it's important to be on good terms with everyone. In many cases, the jobs you get are going to be through who you know, so it's essential not to burn bridges.

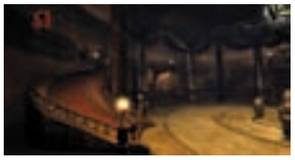
3DA: *What software packages and tools do you use at Heavy Water?*
JG: Our primary tools are Maya and Photoshop, but we also use CrazyBump for Normal maps and we have our own in-house toolset for the game engine.

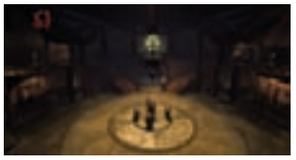
Karma Story
An image I did based on a play one of my friends wrote

Portfolio highlights

These are the projects that Jason has worked on so far in his career as an environmental artist

2008 NBA 2K8
TBA The Flash
TBA Splatterhouse





Splatterhouse
I was given a lot of freedom to set the mood for the rooms and overall feel of the game

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A

Invisible
A render focused on the symbolism of society's barriers and the distractions found there

House of Pace
A render based on a friend's house

3DA: *Do you think there's a shortage of skilled digital artists and did you find it difficult getting into the industry?*
JG: I think there's a lot of talent out there, so no, I don't think there's a shortage of skilled artists. I didn't find it difficult getting into the industry – I just worked on my art on the side and promoted myself a lot, and the opportunities followed. It felt easy, but I put a lot of time into 3D on the side. It was something I really enjoyed so it wasn't a chore, but for someone who may not be as dedicated or enjoy it as much, the road I took might be harder.

3DA: *What are the key skills required to work as an environment artist?*
JG: Being able to model, texture and UV are key skills. Lighting also helps, but often studios will have lighting artists that are separate from environment artists. Looking beyond technical skills, most of the time you're going to be on a team and will be taking critique, so you have to have an open mind and leave the ego at home. In any case, critique is what helps you get better, so why not embrace it? But at the very least you should expect it. It's also good to be self-motivated. While working on a team you're expected to manage yourself and your work. Your supervisor or lead isn't going to have time to check on every little thing you do, so being responsible in your work is a must. I think having patience and being persistent in your work is essential too. In many cases you'll have to troubleshoot stuff that breaks, or chase down bugs that can cause trouble at the last minute, and you'll have to work at finding solutions to those kind of problems that come up.

3DA: *Do you have a personal philosophy or approach to life, and do you try to bring that to your work?*
JG: I feel there's always more that can be achieved; there's always a higher level that can be reached, and this applies to art as well. When I work on something, I put everything I have into it and focus not on making it look just good enough, but making it look great. I think about how I can take things further and push them to the next level. I think this attitude is what helps you become a better artist because you're never content with where you are. No matter how good I think one of my pieces is, I always know I can be doing better.

3DA: *Professionally, what's the most satisfying project you've worked on and why?*
JG: I had a lot of fun being the lighting artist on Splatterhouse. I had more creative freedom on that project than I had on any others. I was given a lot of room to set the mood for the levels and overall feel for the game.

3D Artist: *What would be your dream project to work on?*
JG: I think my dream project is to be the master of my own fate. I would love to be able to work on my personal projects all day, because I have so many ideas. It's kind of like a dream project without an end.

A *Eligo* – an image that was made for a circus-themed art show

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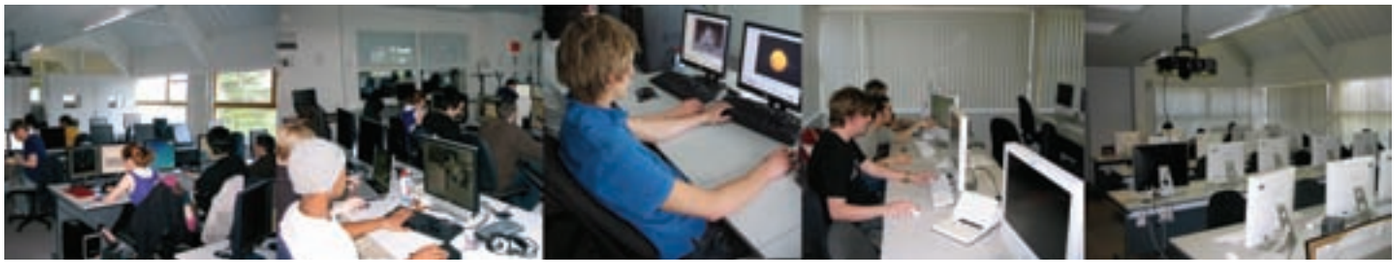
+ The best course and freshest talent from universities around the globe...

University of Cumbria

BA (Hons) Animation, MA Digital Arts, FdA The Art of Games Design



The University of Cumbria was formed in August 2007 when St Martin's College, Cumbria Institute of the Arts and the Cumbrian campuses of the University of Central Lancashire all combined. The university has campuses in Carlisle, Newton Rigg, Penrith, Ambleside and Lancaster, as well as a specialist teacher education centre in London. The BA (Hons) Animation, FdA The Art of Games Design and MA Digital Arts courses are all based at the Brampton Road campus in Carlisle.

The three-year Animation course focuses on a number of creative methods incorporating different media, as well as drawing upon the students' skills in performance, creative writing, life drawing, cinematography and sculpture. The course works closely on the basis that good animation requires creativity of thought and quality of expression, and therefore encourages every student to grow as a performer as much as a practitioner. The course encompasses the technical aspects of animation alongside the creative aspects, too.

Year one covers 3D modelling and animation. These areas are supported by life drawing for movement and

form, photography for composition and lighting, the art of storytelling for narrative structure and cinematography, concept art for designing and visualising your own characters and environments, as well as media production to enable students to deliver work in the appropriate digital formats.

Year two covers animation and the technical aspects of rigging, dynamics and special effects, supported by scriptwriting, performance and postproduction principles and techniques. The year culminates with the production of a short animation, taking you through the whole process from preproduction, pitching, production to critical reflection.

Year three focuses on the final project. This project will be a comprehensive production and you spend the year going through the production cycle. The final piece should be of industry standards and students will be able to market it and enter it into the numerous

competitions and events that are out there, including the Royal Television Society Awards. The final year is also about preparing to enter the industry, and students will produce their own online presence and, through a professional development module, develop the skills and techniques so that they will arrive prepared and confident for their first job interview.

University of Cumbria

Course details

Tel +44 (0)1228 400300

Web www.cumbria.ac.uk

Duration Three years

Fees £3,225

ENTRY REQUIREMENTS
240 UCAS points from GCE A levels (or equivalent qualifications). A portfolio is required for the interview

A Solar – 2007
» **Ian Wharton and Edward Shires**
Time taken: Six months (approximately)
Softimage, Photoshop, Final Cut
This is a still from Solar, which won the National Royal Television Society Award for Best Student Animation in 2007. It was also the Escape Studios Student in CG winner in March 2008. The film can be viewed at **www.solarthefilm.com**.

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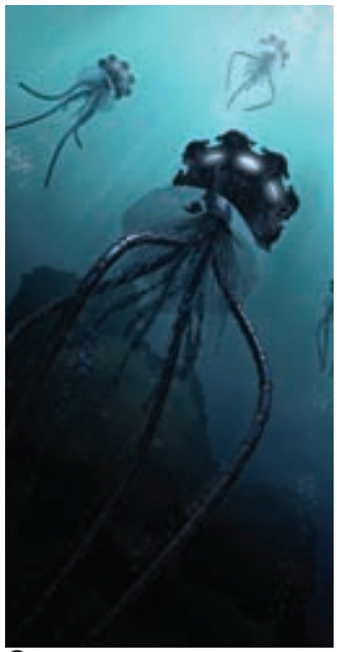

B

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D

B Mechanical Jellyfish – 2008
» **Gareth Harwood**
Time taken: Six days (approximately)
Softimage, Photoshop
This undersea image was created as part of the course's third-year final project. Gareth specialised in object modelling and this was from his collection of eight images.

C DraVinci – 2007
» **Tom Napper**
Time taken: Six days (approximately)
Softimage, Photoshop
The organic image was created as part of the third-year final project. Tom specialised in modelling and this was one of a collection of eight images that he created.

D Plane – 2007
» **Julian Fisher**
Time taken: Eight days (approximately)
Softimage, Photoshop
This image was created as part of the third-year final project. Julian specialised in hard surface modelling; this was from a series of eight images.

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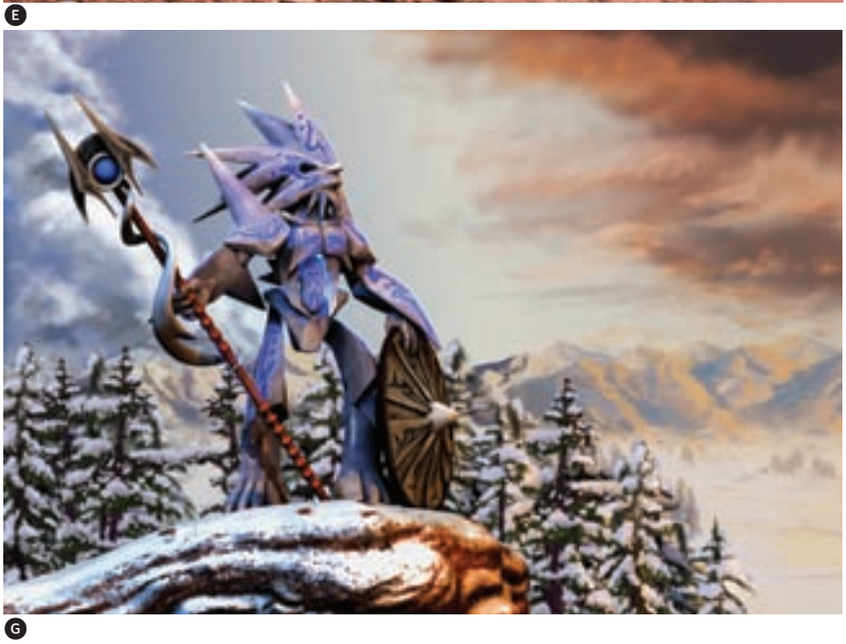
Uni focus

E



G

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E Alien Hunter – 2008
» **Robin Watson**
Time taken: Seven days (approximately)
Softimage, Photoshop
This image was created as part of the third-year final project. This was one of a collection of seven images that he created and featured using hard surface materials.

F Clown – 2007
» **Paul Large**
Time taken: Seven days (approximately)
Softimage, Photoshop
This image was created as part of the course's third-year final project. Paul showcases his organic modelling skills in one of seven final images from his final year colection.

G Ice Warrior – 2007
» **Daniel Fisher**
Time taken: Eight days (approximately)
Softimage, Photoshop
This image was created as part of the third-year final project. Part of Daniel's collection of eight images, the ice warrior is a stylised image merging 3D modelling with a matte background.

H Alien Monk – 2008
» **Robin Watson**
Time taken: Eight days (approximately)
Softimage, ZBrush, Photoshop
This image was created as part of the third-year final project. Robin created the base mesh in Softimage before scultping the final image using ZBrush.

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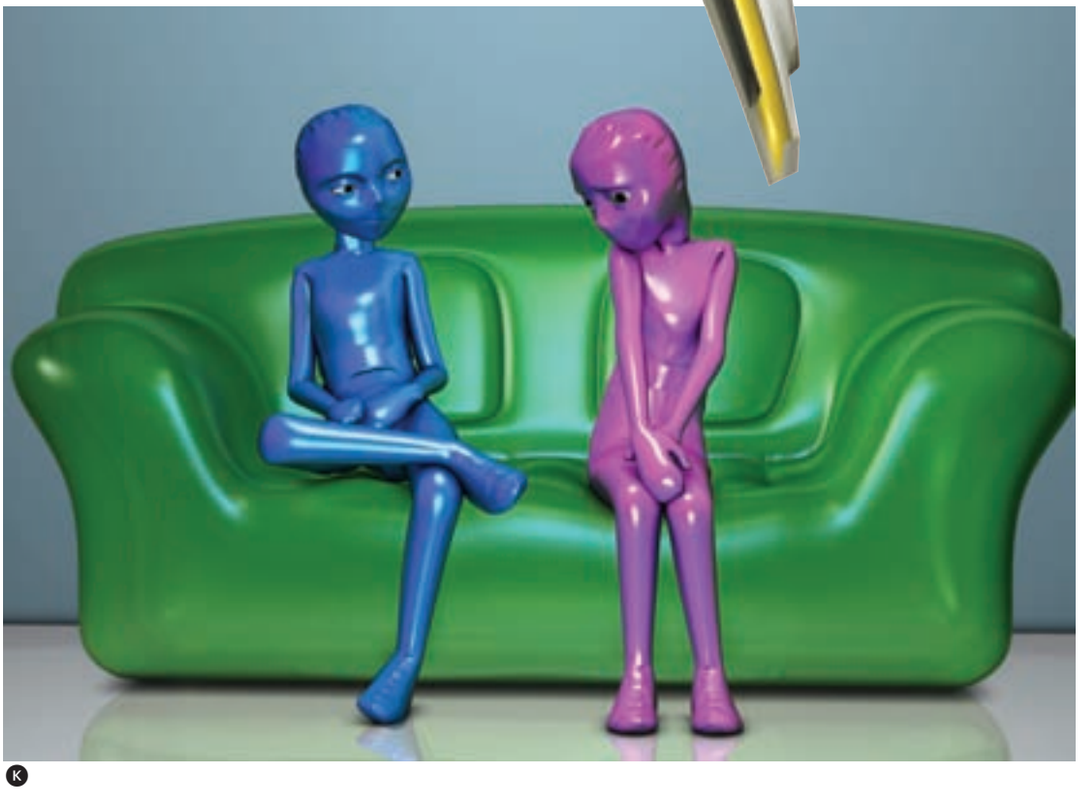
I The Anphipode – 2009
» **Eddie Mzale**
Time taken: Six days (approximately)
Softimage, Photoshop
This image was created as part of the third-year final project. Eddie is specialising in modelling and his project is currently in progress. His work can be seen as part of this year's degree show from 10-18 June (closed Sunday) at the University of Cumbria, Brampton Road Campus, Brampton Road, Carlisle, CA3 9AY.

J



K

J Hilltop Village – 2008
» **Gareth Harwood**
Time taken: Six days (approximately)
Softimage, Photoshop
This image was created as part of the third-year final project. The concept was to create a kind of olde worlde fantasy townscape.

K Inflatable Friends – 2008
» **Dan Lindsay**
Time taken: Two months (approximately)
Softimage, Photoshop, Final Cut
This is a still from Inflatable Friends, which is a short animation about the interaction between two inflatable dolls. This short animation was part of series of four animations Dan completed as part of his third-year final project.

> "On the course I liked the group work and the freedom the project briefs gave you."
>
> **Jennifer Darcy –** May 2009

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Global student galleries

Check out the 3D galleries of students from courses and universities all around the world

Welcome to the new Global student gallery section in 3D Artist where we take you around the world to see what is being created in the land of learning. Each issue we'll select the works of a few individuals who have produced interesting, exciting or just plain excellent work and showcase it here. Do you think your portfolio is good enough to appear in the Global gallery? Well, for a start you must be a student, whether that's full time, part time, by mail or online. All are equally valid. Also, if you graduated from a 3D graphics course within the last 12 months then that's great as well. In the first instance, get in touch with editor Duncan Evans (**duncan.evans@imagine-publishing.co.uk**), preferably with a link to your portfolio so he can have a quick look at your work. List your name, what university you went to and the course you did or are doing.

A

Artist info

Remus Brailoiu

Personal portfolio site www.remusbrailoiu.evonet.ro
University website www.uvt.ro
Country Romania
Software used Autodesk 3ds Max, Adobe Photoshop, Corel PHOTO-PAINT

Remus Brailoiu is currently a student of Graphics Design at the Faculty of Fine Arts based in the city of Timisoara, Romania. The faculty is organised by West University.

B

C

A The Guardian, 2008
» **Remus Brailoiu**
3ds Max 2009
"This is a surreal interior scene with a floating carnivorous fish preparing to 'attack' the viewer. The fish design is inspired from the viperfish species. The scene was modelled in 3ds Max and rendered with V-Ray."

B Combine Assassin, 2008
» **Remus Brailoiu**
3ds Max, AfterBurn
"The Combine Assassin is a character from the first-person shooter *Half-Life 2* that wasn't included in the final version. The 3D model was loosely based on concept art by Ted Backman. The character was modelled and rendered in 3ds Max, while the volumetric smoke was created with AfterBurn."

C Workshop, 2008
» **Remus Brailoiu**
3ds Max, Corel PHOTO-PAINT
"This is a surrealistic interior composition inspired by a school art workshop. I constructed the composition around an Escher-like spherical lens effect. It was made in 3ds Max and rendered with V-Ray, while additional filters and editing was done with Corel PHOTO-PAINT."

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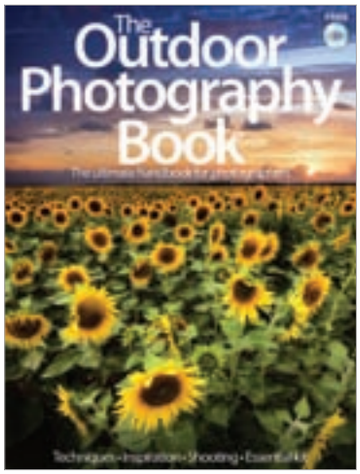

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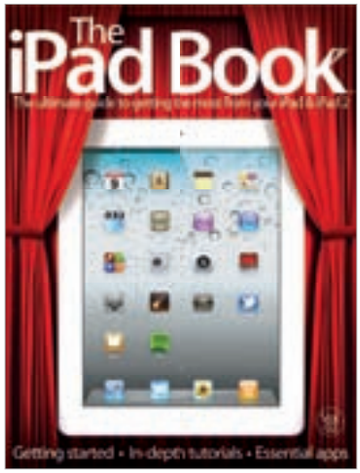

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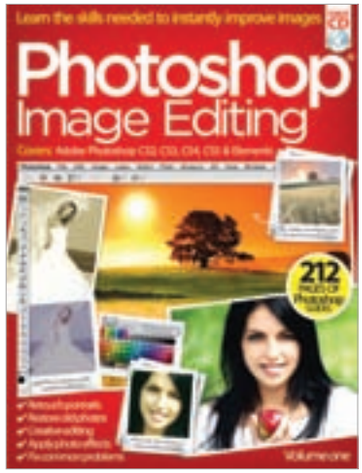

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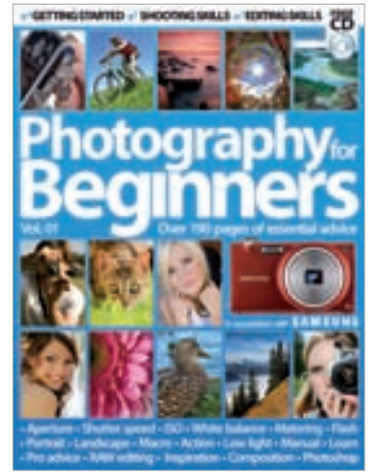

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